Predictors of Shy Children's Coping with a Social Conflict: Mediators and Moderators

by

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ABSTRACT

Shy children are at risk for later maladjustment due to ineffective coping with social conflicts through reliance on avoidance, rather than approach-focused, coping. The purpose of the present study was to explore whether the relation between shyness and children's coping was mediated by attributions and moderated by personality self-theories and gender. Participants included a classroom-based sample of 175 children (93 boys), aged 9-13 years (M = 10.11 years, SD = 0.92). Children completed self-report measures assessing shyness, attributions, personality self-theories and coping strategies. Results showed that negative attribution biases partially mediated the negative relations between shyness and social support seeking, as well as problem-solving, and the positive association between shyness and externalizing. Moreover, self-theories moderated the relation between shyness and internalizing coping at the trend level, such that the positive relation was exacerbated among entity-oriented children to a greater degree than incrementally-oriented children. In terms of gender differences, shyness was related to lower use of social support and problem-solving among incrementally-oriented boys and entity-oriented girls. Thus, shy children's perceptions of social conflicts as the outcome of an enduring trait (e.g., social incompetence) may partially explain why they do not act assertively and aggress as a means of social coping. Furthermore, entity-oriented beliefs may exacerbate shy children's reliance on internalizing actions, such as crying. Although an incrementally-oriented stance may enhance shy girls' reliance on approach strategies, it does not appear to serve the same protective role for shy boys. Therefore, coping-oriented interventions may need to focus on restructuring shy children's social cognitions and implementing gender-specific programming for their personality biases.

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Predictors of Shy Children's Coping with a Social Conflict: Mediators and Moderators

Shyness is conceptualized as temperamental wariness in the face of social novelty and/or self-conscious behaviour in situations of perceived social evaluation (Coplan & Rubin, 2010; Crozier, 1995). In early childhood, shy children's wariness becomes pronounced in situations involving new people, things and places (i.e., *fearful shyness*), which may lead to inhibition of normative social conduct, such as initiation of communication and eye contact (Beer, 2002; Rubin, Coplan, & Bowker, 2009). As children's self-system and perspective-taking skills mature, their social fears can additionally extend to include feelings of embarrassment and socio-evaluative concerns (i.e., *self-conscious shyness*) (Coplan & Rubin, 2010). Since shy children are often cognisant of self-perceived difficulties in social skills and relationships, they may be especially fearful of negative evaluations during interactions or in public performance situations (Crozier, 1995; Rubin & Asendorpf, 1993; Rubin et al., 2009).

Researchers and theorists (e.g., Asendorpf, 1990; Coplan & Rubin, 2010) have suggested that the underlying "cause" for shy children's solitary behaviour may stem from an internal conflict between approach and avoidance motivational mechanisms. According to Gray's (1987) reinforcement sensitivity theory, there are two neurological motivational systems that regulate temperament. The behavioural activation system (BAS) is sensitive to appetitive stimuli (e.g., reward), which triggers approach behaviours and goal-directed activity. In contrast, the behavioural inhibition system (BIS) is sensitive to aversive stimuli (e.g., punishment, novelty), which leads to avoidance behaviours and, potentially, fear and anxiety (Coplan, Wilson, Frohlick, & Zelenski, 2006). It is presumed that the BIS and the BAS are predominantly interdependent systems that exert joint

influences on behaviour (see Corr, 2002), but may operate independently in individuals with extreme personality variants (Coplan et al., 2006). Using Gray's (1987) theoretical framework, Asendorpf (1990) developed a conceptual model to explain children's social involvement with peers as a function of different approach-avoidance motivations. In accordance with this model, shy children's behaviour is thought to be motivated by a *high* approach-*high* avoidance conflict, marked by a simultaneous desire to engage in social interactions with peers (i.e., *high* social approach motive) and compulsion to avoid social contact (i.e., *high* social avoidance motive) due to social fears and anxieties (Asendorpf, 1990; Coplan & Rubin, 2010; Rubin & Asendorpf, 1993). Such internal conflict is thought to compromise shy children's behaviour by leading them to withdraw or avoid social settings and ultimately experience recurrent episodes of solitude (Rubin & Asendorpf, 1993).

Although shyness is not a clinically defined behavioural, social or emotional disorder, its persistence is associated with a series of negative outcomes in children, such as low self-esteem, loneliness, and negative affect (Findlay, Coplan, & Bowker, 2009; Nelson, Rubin, & Fox, 2005; Rubin et al., 2009). Furthermore, these outcomes render shyness an important precursor to internalizing disorders in later childhood, adolescence or adulthood, such as depression and anxiety disorders (Rubin et al., 2009; Schwartz, Snidman, & Kagan, 1999; Van Ameringen, Mancini, & Oakman, 1998).

Thus, these long-term repercussions emphasize the need to investigate ways through which such negative consequences of shyness can be minimized or avoided. The purpose of this study was to examine cognitions and coping behaviours of mid- to late-childhood children, ranging in levels of shyness. In particular, I explored the role of

children's attribution patterns and implicit self-theories of personality as mediators and moderators, respectively, of the relationship between shyness and coping strategies. By identifying underlying mechanisms, as well as factors that may attenuate or exacerbate the association between shyness and coping, the current study can provide insight into factors that perpetuate adjustment problems later in life.

Importance of Shy Children's Coping Strategies

Shy young children, in particular, are at an increased risk of maladjustment because their social fears and anxieties decrease the likelihood that they will cope effectively with social situations, compared to non-shy or older shy children. Research (e.g., Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006; Jackson & Ebnet, 2006; Rubin et al., 2009; Sandstorm, 2004) has shown that high trait-anxious and socially withdrawn children tend to rely primarily on avoidance as a coping response by actively removing themselves from social situations. Such coping behaviour is thought to provide immediate rewards for the shy child by temporarily relieving the social wariness that they feel upon exposure to social situations (Prins & Ollendick, 2003; Rubin et al., 2009). Although avoidance is often a normative response to anxiety-provoking or threatening situations, its adaptive value (e.g., fear reduction) may diminish if it is used frequently and consistently. For example, for shy children, regular removal from social settings can become negatively consequential in the long-term by consistently reinforcing avoidant coping and increasing the probability of its recurrence (Findlay et al., 2009; Rubin et al., 2009).

Moreover, repetition of such behaviour can lead to the establishment of a maladaptive transactional relationship between shyness and avoidance. For instance,

increased withdrawal from social company limits shy children's opportunities for using social situations as learning tools. As a result, shy children essentially deprive themselves of learning ways to manage their social anxieties and improve their interpersonal skills. This lack of improvement in social competence can aggravate shy children's wariness of social events, decreasing their likelihood of approaching social situations. It also increases the probability that any minor attempts they do make in initiating contact with peers or accomplishing some social goal will result in failure (Rubin et al., 2009).

An observational study by Stewart and Rubin (1995) provides further support for these ideas by demonstrating that, in dyadic play settings, socially withdrawn children are more likely than average school-aged children to attempt to engage playmates through the use of low-cost social strategies. Such strategies are characterized by indirect and discreet efforts (e.g., "Can you look at this?") as opposed to high-cost social strategies, which involve direct and assertive ways of approaching peers (e.g., "Do you want to play with me?"). In contrast to their non-withdrawn counterparts, socially withdrawn children's greater pursuit of low-cost social strategies was accompanied by lower success in recruiting playmates.

These common deficits in social problem-solving also may make shy children more susceptible to peer rejection, plausibly because peers are sensitive to and can easily detect social violations of age-specific norms in their interactions with others. As a result, "awkward" or age-inappropriate behaviours exhibited by socially withdrawn children may be easily detected by their peers, and often serve to trigger victimization and bullying rather than compassion (Nelson et al., 2005; Rubin et al., 2009; Stewart & Rubin, 1995).

Accumulation of such negative interpersonal experiences over time can essentially reinforce shy children's fears and negative self-appraisals with respect to social encounters, stabilizing or even increasing the intensity of their shyness over time and, in turn, the likelihood of adjustment problems and psychopathology (Rubin et al., 2009). In fact, a recent study by Findlay et al. (2009) provided support for these ideas by showing that internalizing coping, such as crying or self-blame, in social settings partially mediated the relation between shyness and certain internalizing problems, such as loneliness, negative affect and social anxiety. The authors found that shy children were more likely than non-shy children to resort to internalizing coping strategies, such as "I feel sorry for myself," in response to a negative interpersonal encounter (i.e., a peer argument). Furthermore such coping efforts may, at least partially, account for feelings of loneliness and social anxiety commonly experienced by these children.

Overall Research Question

As is evident from the review of literature above, there is considerable evidence for strong relationships between shyness and adjustment problems. Furthermore, recent evidence suggests maladaptive coping efforts, such as avoidance, seem to mediate partially these associations and sustain shyness over time. Although investigators have established an association between maladaptive coping and maladjustment for shyness, there is limited research on the range of coping strategies shy children adopt in negative social settings, as well as the underlying factors that may contribute to their tendencies to use these coping efforts. In particular, researchers have not fully investigated how social cognitions and personality theories of shy children might impact the relationships between shyness and coping. As a result, I addressed the following general question in

my M.A. thesis: what predicts coping behaviour of shy children? The following sections of this paper will provide an extensive overview of literature on coping behaviour and potential underlying factors that may motivate or predict coping choices of shy, as well as non-shy children and adults in various socially distressful encounters.

Coping Strategies

Coping has been defined as ''cognitive and behavioral efforts to manage demands that are appraised as taxing or exceeding the resources of the person'' (Lazarus & Folkman, 1984, p. 141). More recent developmental conceptions define coping as "action regulation under stress," which refers to the idea of how people manage and direct their behaviour, emotion, and orientation under conditions of stress (Skinner & Zimmer-Gembeck, 2007, p.122). Coping behaviour is usually motivated by the actual or anticipated presence of a feared situation, and is often triggered by the high emotional arousal that results from real or perceived existence of such threats (Eisenberg, Fabes, & Guthrie, 1997). Under conditions of stress, the coping process involves detection and appraisal of the significance of the stressor, the associated emotions and, in turn, selection of some action to either regulate the existing emotional experience or to alter the given environmental circumstances. Therefore, upon confrontation with stress, individuals attempt not only to deal with the underlying physiological reactions (e.g., arousal), but also to coordinate these emotions with their cognitive appraisals of social and physical environments in a way that allows them to execute the most efficient coping response for the situation at hand (Eisenberg et al., 1997; Lazarus & Folkman, 1984; Skinner & Zimmer-Gembeck, 2007). As a result, it is important to note that emotion and cognition exert bi-directional influences on each other in all the abovementioned phases of the

coping process, which renders coping highly dependent and virtually synonymous with the ability to effectively self-regulate (Eisenberg et al., 1997; Skinner & Zimmer-Gembeck, 2007).

Under conditions of stress, it is presumed that emotional and cognitive processes operate simultaneously to maximize self-regulation and coping. Specifically, it is suggested that moderately stressful circumstances allow for good coordination between emotional and cognitive processes to produce highly self-regulated and consolidated coping responses. Extreme stress, however, is thought to breakdown this synergetic relationship and overwhelm self-regulatory capacities as one process assumes greater predominance over the other (Compas et al., 2001). In terms of coping, this implies that "unregulated" involuntary responses could reflect a high stress reaction and/or a weak regulatory system, which yields emotionally-driven coping; whereas "regulated" volitional responses may reflect a weak stress reaction and/or a well-developed regulation system that leads to cognitive-driven coping (Skinner & Zimmer-Gembeck, 2007).

Coping strategies that stem from these underlying processes are commonly classified into two major categories (Causey & Dubow, 1992). The first is approach-focused coping, or behavioural, cognitive, and emotional activities (seeking social support and problem-solving) oriented towards the stressor, with the aim to affect the stressor directly. For example, seeking social support refers to initiatives such as, telling a friend, teacher, or family member about the problem, and seeking their advice (e.g., "Ask someone who has had this problem what he or she would do"), whereas problem-solving involves development of actions for effectively resolving the problem or preventing

similar conflicts from arising in the future (e.g., "Try to think of different ways to solve it").

The second category is avoidance-focused coping, or behavioural, cognitive, and emotional activities (distancing, internalizing, and externalizing) oriented away from the stressor in order to avoid it or control its emotional impact. For instance, distancing refers to ignoring the stressor or minimizing the significance of the stressor in one's life (e.g., "Make believe nothing happened"), whereas internalizing involves development of negative internal states as a consequence of the stressor, such as self-pity, sadness, and self-blame (e.g., "Become so upset that I can't talk to anyone"). Externalizing refers to re-direction of anger, frustration, or sadness triggered by the stressor onto neutral sources (e.g., "Take it out on others, because I feel sad or angry").

Although the above higher-order conceptualizations of approach-avoidance are often used in research studies, Skinner, Edge, Altman, and Sherwood (2003) have noted several disadvantages to using these approaches when studying coping behaviour. First, these authors note that there is no agreement in literature in terms of the types of lower-order coping strategies that should be encompassed by the approach and avoidance broad category systems, rendering their definitions ambiguous. For example, although externalization is conceptualized as an avoidance-focused strategy because efforts are not directed towards effortful control of the stressor, it plausibly can represent an approach-focused strategy because the distress or physical venting stems from thoughts oriented towards the stressor, in spite of the absence of direct attempts to change it.

Second, approach-focused categories tend to be more focused on positive, constructive resolution efforts, whereas avoidance-focused categories are more oriented

towards emotionally negative and potentially destructive efforts of resolving stressors. As a result, categories are not mutually exhaustive because some lower-order coping strategies cannot be adequately conceptualized by either category. Important categories of coping such as aggression and rumination, for example, are often neglected as coping options by these broader systems plausibly because they are active strategies with a negative connotation that cannot be adequately ascribed by either of the categories.

Third, Skinner et al. (2003) pointed out that all lower-order categories are multidimensional, in that each coping strategy represents a unique combination of actions and emotions with a distinct purpose that cannot be captured by a single higher-order category. For instance, problem-solving is active and emotionally positive, with an individual's attention and goals oriented towards changing the stressor. Although rumination is an example of another approach-oriented strategy, unlike problem-solving, it is emotionally negative and passive, with an individual's thoughts and emotions focused on pondering, rather than altering, the stressor.

Thus, delineating individual coping strategies by which individuals deal with stressors seems to offer a more comprehensive insight into not only individuals' actions and emotions, but also goals, which are typically obscured by higher-order conceptualizations, such as approach and avoidance. On the basis of these criticisms, I have therefore chosen to focus on lower-order coping strategies of the approach-avoidance framework in the present study.

As noted by Skinner et al., (2003), there is much controversy in literature with respect to the classification of externalizing coping within the higher-order frameworks of approach-avoidance. Although externalizing is typically considered an avoidance-

oriented coping strategy, the fact that externalizing behaviours commonly originate from cognitions oriented towards the stressor and their analogy to aggression, which is typically deemed an approach-oriented coping initiative, raises uncertainties with respect to the correct categorization of externalizing within the higher-order frameworks. On the basis of these theoretical ambiguities, I have therefore chosen to examine externalizing coping as a separate classification system, rather than a subtype of approach or avoidance coping.

It is also noteworthy that the nature of the relationship between shyness and externalizing is not clearly defined in literature. Although many researchers (e.g., Nelson et al., 2008; Rydell, Diamantopoulou, Thorell, & Bohlin, 2009; Thorell, Bohlin, & Rydell, 2004) have found shyness to serve as a protective factor with regard to externalizing problems in both children and adults by lowering the predisposition of shy individuals to engage in acting-out behaviours in negative situations, other researchers (e.g., Gest, Sesma, Masten, & Tellegen, 2006; Prakash & Coplan, 2007) have not established any direct associations between shyness and externalizing tendencies or social coping (e.g., Findlay et al., 2009). In fact, some researchers (e.g., Serbin, Moskowitz, Schwartzman, & Ledingham, 1991) even suggested that socially withdrawn children are at an increased risk of exhibiting conduct problems in adolescence. In an attempt to shed greater clarity into some of the abovementioned theoretical and empirical ambiguities, in the current study, I will examine prospective relationships between shyness and externalizing coping in a purely exploratory nature.

Further noted by Skinner et al. (2003), is the argument that the presumed level of adaptation for using any given coping strategy often needs to be interpreted within a

larger context. For example, some approach-oriented coping strategies, such as social support seeking, that are generally considered adaptive may confer a different meaning in the context of shyness. Research (e.g., Coplan, Arbeau, & Armer, 2008; Hastings et al., 2008) has shown that shyness and overprotective parenting are highly interrelated, which may have implications for the type of social support (e.g., comfort, guidance, or direct input) that shy children raised in highly restrictive environments expect from others when faced with socially conflicting situations. Overprotective parents tend to be very intrusive in their children's lives by managing or removing their children from stressful situations, thereby discouraging their children's ability to develop self-efficacy and independence when faced with conflicts on their own. As a result, shy children do not acquire the necessary coping skills to deal with conflicts but rather come to expect their parents, or other significant persons in their lives, to resolve their problems for them (Coplan et al., 2008; Rubin and Burgess, 2002). Although studies (e.g., Jackson & Ebnet, 2006) have shown a decreased tendency of shy individuals to seek social support in comparison to their non-shy peers in socially conflicting situations, it is important to remain cognizant of overdependence on others when examining and drawing inferences from prospective relationships between shyness and social support seeking.

According to Lazarus and Folkman (1984), selection of appropriate coping strategies and their efficacy also largely depends on the characteristics of the stressor, such as the degree of control a person may have over a specific stressful situation. Controllability over a stressor can be defined as "the degree to which the objective conditions of a stressful situation can be prevented or eliminated by the abilities, resources, or actions of a typically developing child or adolescent" (Clarke, 2006, p. 13).

Controllable interpersonal stressors include situations, such as an argument with a peer or a sibling, in which the normative response is to try to resolve the problem directly through approach-oriented behaviours. In contrast, uncontrollable interpersonal stressors refer to circumstances that are out of the child's control, such as parental discord or a child's best friend moving away, in which the normative response is to avoid the problem, accept it, or attempt to adapt to the situation through one of the avoidant strategies (Causey & Dubow, 1992). Failure to respond in this fashion is expected to lead to a poor person–environment fit, and ultimately maladjustment (Lazarus & Folkman, 1984).

In a recent meta-analysis Clarke (2006) examined the relationship between coping and psychosocial health among youth. Results indicated that in the context of controllable stressors, such as peer arguments, the use of active coping (e.g., problem-solving) by children and adolescents was associated with fewer internalizing and externalizing symptoms as well as higher social competence, in contrast to youth who attempted to actively resolve uncontrollable stressors, such as parental conflict or illness (Clarke, 2006). Thus, the ability of youth to discriminate stressor controllability appropriately and, in turn, select the most adaptive coping strategy to deal with the problem at hand seems to buffer against mental health, as well as social skill deficits.

Research with shy adults and children (e.g., Burgess et al., 2006; Jackson & Ebnet, 2006; Rubin et al., 2009; Sandstorm, 2004), however, provides ample evidence that shy individuals are more likely than their non-shy peers to rely on the less adaptive avoidance-focused coping in controllable situations, such as interpersonal conflicts. In response to relationship conflicts, shy adults endorse more emotion-focused coping strategies, such as self-blame and denial, relative to non-shy individuals who endorse

more active coping styles, such as seeking social support (Jackson & Ebnet, 2006). Similar findings pertain to shy children in late childhood, who respond to negative peer experiences through specific subtypes of avoidant strategies such as internalization, wishful thinking, and isolation (Sandstorm, 2004).

Little is known about the factors that account for the well-established relationships between shyness and subtypes of avoidant coping (e.g., internalizing) in research. One plausible reason for the inability of shy children to act assertively in controllable, yet negative, social encounters is underlying deficits in shy children's social cognitions, including their threat appraisals. In other words, shy individuals might appraise stressful, as well as nonstressful situations, differently than their non-shy counterparts. In fact, Lazarus and Folkman (1984) posited that variables such as threat appraisals are the second most important determinant of coping efficacy, following stressor controllability. Thus, investigating shy children's social cognitive processes may offer important insights into factors that predict their coping behaviour in social situations.

Causal Attributions

The types of attributions children make for both positive and negative events are often used as indicators of underlying social cognitive processes. Attributions refer to justifications for why an event occurred by incorporating three main factors: locus of control (internal, external), event stability (stable, unstable), and event generalizability (global, specific) (Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998).

Internal attributions are characterized by the belief that there is a relation between one's behaviour and outcome (e.g., self is to be blamed for a problem), whereas external attributions refer to beliefs that outcomes are caused by factors outside of oneself (e.g.,

situational circumstances). Stability of events is related to the consistency with which children attribute same causes for events over time (e.g., children may consistently view themselves as a cause of negative outcomes). Finally, generalizability of events refers to the extent to which children believe the causes of events can be applied to other situations (e.g., self-blame for negative interpersonal outcomes may lead to self-blame for negative academic outcomes) (Weiner, 1986; Thompson et al., 1998). Researchers have shown that youth with a negative attributional style tend to blame themselves for negative events (internal), view the causes of events as consistent (stable), and generizable across situations (global). Conversely, they attribute positive events to factors outside themselves (external), view the causes of events as inconsistent over time (unstable), and situation-specific (specific) (Thompson et al, 1998).

To date, studies (e.g., Burgess et al, 2006; Vassilopoulos & Banerjee, 2008; Weems, Berman, Silverman, & Saavedra, 2001; Wichmann et al., 2004) have shown that shy children exhibit several different patterns of faulty thinking, known as attribution biases. In particular, these children adopt self-defeating attributions in hypothetical social situations, characterized by attributions of social successes to unstable, external variables (e.g., "John and Matt let me play soccer with them because they were in a good mood on that particular day") and social failures as stemming from stable, internal characteristics of themselves (e.g., "John and Matt did not let me play with them because I am not any good at soccer") (Burgess et al, 2006; Vassilopoulos & Banerjee, 2008; Weems et al., 2001; Wichmann et al., 2004).

Furthermore, Vassilopoulos and Banerjee (2008) found that non-clinically socially anxious 11-13 year-old children also catastrophized negative and positive events,

by perceiving the outcome of such situations as having extreme implications for themselves or their future. For example, a socially anxious child whose request to borrow a peer's book gets rejected may interpret the outcome as indicative of the peer's intentional desire to embarrass her, rather than a more neutral explanation, which would suggest that the peer simply needed to consult the book at that particular moment. The tendencies of shy children to discount self-responsibility for positive events and attribute mildly negative social events to a self-enduring characteristic (e.g., "I am not likeable") are particularly important because they may increase shy children's perceptions of perceived danger in social situations. Such inclinations can hinder shy children's ability to improve their social skills, undermining their perceived self-efficacy in interpersonal encounters, and reinforcing their social fears (Vassilopoulos & Banerjee, 2008).

These persistent beliefs of social incompetence, in turn, may increase the likelihood that shy children will resort to complete avoidance of social encounters or greater use of safety-seeking behaviours in interpersonal relations, such as keeping quiet in a peer group. In fact, Wichmann et al. (2004) have shown that socially withdrawn children do report lower efficacy for assertive goals than their less shy peers and show a preference for non-assertive, withdrawn strategies to deal with hypothetical conflict situations, such as simply staying away from social disagreements. Interestingly, however, socially withdrawn children have similar levels of perceived control over social events as non-shy children, suggesting that they are just as knowledgeable as their peers about available opportunities to deal with social situations. Nevertheless, they are likely unable to execute any assertive actions (i.e., they have performance deficits), plausibly due to

interference of their social fears with some aspect of their social cognitive processes (Wichmann et al., 2004).

Recently, Alm (2007) suggested that one major reason for shy individuals' susceptibility to negative attribution biases might stem from their high degree of self-focus on emotional and physiological reactions caused by their shyness. Such high self-awareness of symptoms of shyness, such as anxiety and embarrassment, is particularly problematic because it is related to a greater focus on anxiety-provoking stimuli. This increased focus can lead to cognitive biases, such as selective attention to threatening cues and recall of past negative social outcomes. In a series of hypothetical interpersonal scenarios, aimed at eliciting social discomfort or worry, Alm (2007) found that shyness in adults was associated with a greater likelihood to attribute such emotional reactions to internal causes (e.g., being shy, having no behavioral strategy or having the wrong behavioral strategy to deal with the problem). These findings suggest that shy individuals often exhibit a high degree of self-monitoring in social settings, which renders their own behaviours and emotions more salient than external factors. As a result, internal information about the self becomes more readily available when explaining any given event, leading them to perceive their personality characteristics as more plausible causes of negative social outcomes (Alm, 2007).

Emotions, Attributions and Coping

Burgess and colleagues (2006) extended these ideas in a study that examined shy/withdrawn children's emotional reactions, attributions and coping strategies in a negative hypothetical interpersonal encounter with an unfamiliar peer (e.g., a peer spills milk on the participant child in the lunchroom). The authors found that although

aggressive, shy/withdrawn and non-shy children experienced equal levels of anger and embarrassment as a result of these situations, shy/withdrawn children were more likely than their aggressive and non-shy counterparts to make attributions of internal blame for the outcome. In comparison to the other children, shy/withdrawn children were more likely to internalize their emotional reactions to characteristics of themselves, such that they perceived the intent of the perpetrator as a consequence of their own behaviour (e.g., "I must have done something to make it happen"). Furthermore, in response to these incidents, shy/withdrawn children were more likely than other children to endorse avoidance as a coping response, by indicating that they would simply leave the social encounter and do nothing. In line with arguments posited by Alm (2007), these findings suggest that shy children's sensitivity and awareness of their own emotional reactions may redirect their focus onto the self.

Given that shy children experience high levels of anxiety and tend to have a poor self-regard in social settings, the presence of any additional negative emotional reactions may overwhelm their attempts at self-regulation. This response may increase the likelihood that their social cognitions will be guided, and potentially biased, by their high negative emotionality towards internal aspects of themselves (Alm, 2007; Burgess et al., 2006; Lemerise & Arsenio, 2000). Given that there is no external cause to which problem-solving attempts could be directed, shy children's behaviour may become constrained on the self and avoidance rather than approach coping. Moreover, avoidance may become an attractive coping candidate because it can prevent further exacerbation of their anxious internal state (Burgess et al., 2006).

Researchers (e.g., Lengua & Long, 2002; Eisenberg, Shepard, Fabes, Murphy, & Guthrie, 1998) have suggested that negative emotionality and emotion regulation difficulties associated with shyness may indeed predict maladaptive coping strategies. Research with 8-12-year-old children has suggested that negative emotionality predicted higher levels of avoidant coping via the mediating role of threat appraisals (Lengua & Long, 2002). In other words, a child who is high in negative emotionality, such as a shy child, is more likely than their less shy age mates to exacerbate their affective arousal by selectively focusing on threatening cues or negative consequences of events. As a result, shy children may resort to avoidant coping as a means of relief from overwhelming levels of emotional arousal. These authors also found that greater self-regulation predicted higher levels of active coping, suggesting that the ability to effectively self-regulate internal states seems to facilitate redirection of attention towards constructive planning and problem-solving (Lengua & Long, 2002).

An excellent longitudinal study that examined parent and teacher ratings of children's shyness from 6-to-12-years of age in relation to children's emotionality, self-regulation and coping lends further support for these ideas. Eisenberg and colleagues (1998) found that higher teacher and parent ratings of children's shyness were related to a higher degree of negative internalizing emotions and lower positive emotionality. Shy children were also perceived by their teachers as exhibiting relatively low levels of emotional control, specifically in anxiety-provoking social settings such as the classroom, in which shy children often experience socio-evaluative concerns about peer acceptance. These authors further found that, in response to peer conflicts, shy children were likely to

do nothing and engage in especially low levels of instrumental coping, such as seeking social support.

Taken together, these studies provide strong theoretical and empirical foundations for individual links between shyness, attributions and coping strategies. However, none of the literature to date provides an integrated framework that captures the underlying mechanism through which these relationships may operate. For example, the strong relationships between negative emotionality, low levels of emotional self-regulation, and high self-awareness suggest that these aspects of shyness might all play a role in predicting shy children's cognitive and coping patterns. In fact, the inability to self-regulate may be of most vital importance to shy children because their social anxieties may be potent enough to interfere with both their social cognitive and coping processes.

When confronted with a social problem, the high physiological self-monitoring and low self-regulation described as characteristic of shy individuals may orient their attention towards *perceived* negative, internal, stable aspects of themselves, such as their social skill deficits and social fears. Such self-focus may distort their objectivity when processing social cues, so that they come to perceive the problem as stemming from a consistent, ever-present fault within themselves, rather than external circumstances. The formation of these negative attribution patterns or similar social cognitions (e.g., "I shouldn't have said that") may further exacerbate their social anxieties, overwhelming their self-regulatory capacities. As such, these bi-directional interactions between children's anxieties and negative cognitions may come to serve as the driving forces for their coping responses. For instance, the combination of self-blame and excessive social fears may redirect shy children's focus towards minimizing further exacerbation of their

internal state, rather than conflict resolution, causing them to resort to avoidance-focused coping as a means of dealing with social conflict.

In the present study, I will test these postulations using a mediation model, which will examine whether attributions partially mediate the relationship between shyness and avoidant, as well as approach-oriented coping. Although the nature of the relationships between shyness, attributions and coping may provide insight into motivational mechanisms underlying shy children's coping behaviour, it is also important to consider under what circumstances the model or individual relations within the model may vary. Thus, in subsequent sections of this paper, I summarize the literature that highlights some of the individual differences that may exist among shy and non-shy individuals, which may be of relevance to my proposed theoretical framework.

Self-theories of Personality

Recently, there has been a growing consensus among researchers on the importance of investigating the role of intrinsic factors, such as individuals' implicit self-theories of personality, on attributions and coping mechanisms (Hong, Chiu, Dweck, Lin, & Wan, 1999). Implicit self-theories of personality refer to beliefs in the stability versus malleability of human traits and are related to specific types of thinking and coping patterns (Beer, 2002; Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997; Molden & Dweck, 2006). Individuals with entity views of personality, for instance, believe that human attributes are fixed entities that are not subject to personal development. Thus, they tend to adopt *performance* goals, in which they focus on proving their abilities to others by gaining approval and avoiding negative evaluations. In face of a challenge, they tend to adopt helpless, avoidant, responses due to a belief that exerting additional and

likely unsuccessful efforts to change a situation would be a further indicator of their flaws. In contrast, incremental theorists view human attributes as susceptible to growth through a person's efforts. Thus, they tend to adopt *learning* goals that focus on improvement and lead them to adopt action-oriented responses aimed at improving, rather than avoiding, problems (Dweck, 1999; Hong et al., 1999; Molden & Dweck, 2006).

Self-theories of personality, attributions and coping: Evidence from academic contexts. With respect to the relation between implicit self-theories of personality, self-judgments and coping, studies on academic failure have provided important insights into the types of attributions children make for positive and negative events, as well as ways in which they respond to such events. For example, Robins and Pals (2002) have shown that young college students who believe that their intelligence is fixed (entity theorists) tend to attribute achievement successes (e.g., good grades) to external factors, such as luck, and achievement failures (e.g., bad grades) to internal factors, such as low intelligence levels. Thus, it is noteworthy that for both event outcomes, entity theorists emphasize causes that stem from uncontrollable, internal, stable and global factors (i.e., general intelligence). Subsequent to such experiences, these individuals often resort to helpless response patterns, such as quitting the task, to avoid further revelation of their self-perceived inabilities (Dweck, 1999; Hong et al., 1999; Robins & Pals, 2002). Conversely, students who view their intelligence as changeable (incremental theorists) tend to attribute their failures to controllable, internal and specific factors, such as study skills, and their successes to hard work (Robins & Pals, 2002). Thus, for incremental theorists, failure is seen as an indicator of the extent to which a particular skill has developed, and from which they can generate mastery-oriented

responses to acquire new skills, such as more efficient studying techniques (Dweck & Leggett, 1988; Hong et al., 1999; Robins & Pals, 2002). Thus, the relationships between theories of personality, self-judgements and behavioural patterns in the context of academia suggest that there also may be strong links between shy children's self-theories of personality, attributions and coping in social situations. To date, however, researchers have not examined these interrelations.

Self-theories of personality, attributions and coping: Evidence from social contexts. In addition to academic contexts, there is also evidence for associations between implicit self-theories and attributions in situations of social conflict. When confronted with a social predicament, for instance, entity theorists tend to display a *trait focus*, in which they primarily evaluate an individual's behaviour on the basis of his or her personality traits. Due to the belief that traits provide a reliable measure for understanding behaviour, child and adult entity theorists are likely to direct and allocate more attention to information that is consistent with their stereotype-based expectations (e.g., a delinquent boy bullying his peer), while disengaging their focus from inconsistent events that violate their beliefs (e.g., a delinquent boy offering helpful basketball tips to his peer) (Erdley & Dweck, 1993; Molden & Dweck, 2006; Plaks, Stroessner, Dweck, & Sherman, 2001). Furthermore, entity theorists are likely to perceive negative characteristics as stemming from a persistent flaw in someone's character and to generalize them to global assumptions about a target's overall persona (e.g., the boy's aggressive and delinquent actions suggest that he is immoral) (Erdley & Dweck, 1993).

Under the same social circumstances, however, incremental theorists are likely to display a *process focus*, in which they emphasize people's dynamic interactions with

external circumstances (i.e., environment), as well as underlying psychological processes (e.g., motivations, emotional states), as main determinants of one's actions. Unlike entity theorists, incremental theorists typically view variation in behavior as normal and meaningful. They are therefore likely to exhibit greater attentional engagement to inconsistencies in order to make sense of unexpected behavioural trends (Molden & Dweck, 2006; Plaks et al., 2001). In line with the above example, an incremental theorist may evaluate the way in which interactions between the classroom environment and motivations of the typically aggressive child elicited the child's expression of kindness (e.g., teacher may have offered a reward to anyone willing to help another student with basketball, and thus the aggressive child was helping the boy for "selfish" reasons). Thus, in comparison to entity theorists, incremental theorists understand that various aspects within social settings can lead to behavioural fluctuations across situations and are therefore less likely to make stable, generalized conclusions about someone's character based on limited information (Erdley & Dweck, 1993; Plaks et al., 2001).

Erdley and colleagues (1997) extended these findings further by demonstrating that implicit self-theories of personality shape not only attributions, but also coping of children confronted with a social challenge (i.e., becoming a member of a pen pal club). Children with entity self-theories, for example, were more likely than incremental self-theorists to attribute their failure to be admitted into the pen pal club to their own low ability and to react to their disappointment with helplessness (i.e., giving up). Children with incremental self-theories, on the other hand, tended to perceive insufficient effort as the precipitator of their social failures. As a result, they continued to persist in their attempts to become a club member.

A study (Beer, 2002) with young, shy adults yielded similar findings by depicting the divergent effects of implicit self-theories of shyness on interpersonal encounters. Similar to non-shy entity children, shy adult entity theorists seemed preoccupied with socio-evaluative components of social interactions, such as making good impressions on others. Therefore, they preferred to engage in "easy" social interactions (i.e., their partner was of lesser social ability) that did not challenge their social abilities. They also exhibited low levels of approach-oriented behaviours in social interactions, essentially disengaging themselves from opportunities from which they could extract useful information to improve their social skills and learn to self-regulate their social anxieties. In contrast, shy incremental theorists viewed social interactions as learning experiences for acquiring better social skills to overcome shyness. As a result, they preferred to take part in "difficult" social interactions, which were initially challenging but would help them improve their social abilities. Their focus on positive aspects of social encounters enabled them to display more approach-oriented behaviours during interactions and enhanced their ability to manage their nervousness over time. Taken together, these findings suggest that implicit self-theories of personality are important determinants of specific motivations and behaviours for children and adults in social settings, but the relation of these beliefs to cognitions and actions of shy children requires further examination.

This evidence, then, raises questions regarding the ways in which children's self-theories of personality might impact cognitions and coping efforts of shy children, who are already at a high risk of making cognitive and coping errors. Given the established links in research between shyness and attribution biases (e.g., Alm, 2007; Burgess et al,

2006; Weems et al., 2001; Wichmann et al., 2004) and the associations between implicit self-theories, characteristic attributions and response patterns (e.g., Beer, 2002; Erdley et al., 1997; Erdley & Dweck, 1993; Dweck & Leggett, 1988; Molden & Dweck, 2006; Plaks et al., 2001; Robins & Pals, 2002), it may be postulated that implicit self-theories will moderate the direct and indirect effects of shyness on coping strategies.

For example, the simple bivariate relationship between shyness and coping may vary in magnitude as a function of incremental and entity self-theories. Due to the entity belief that shyness is a fixed personality trait, the relationship between shyness and avoidance-focused coping may be more negative for shy entity-oriented theorists compared to incrementally-oriented theorists. For shy incrementally-oriented theorists, however, the relationship between shyness and approach-focused coping may be more positive relative to entity-oriented theorists because of these children's beliefs that social initiatives can help them conquer their shyness.

Furthermore, it may be hypothesized that the proposed mediational design between shyness, attributions and coping will be moderated by implicit self-theories as shown in Figure 1, such that the nature of individual relationships will differ on the basis of implicit self-theories. For instance, shy entity self-theorists may attribute social conflicts to internal, stable, global aspects (i.e., *more* negatively-oriented attributions) of their personality to a greater degree than shy incremental theorists, who may attribute such predicaments to internal, unstable and specific causes (i.e., *more* positively-oriented attributions). As such, the relationship between shyness and negative attribution biases may be stronger for entity than incremental self-theorists. Attribution biases, in turn, may be more negatively predictive of avoidance-oriented coping for entity-oriented children

because they tend to perceive themselves as lacking the necessary control and skills to overcome presenting social problems. In contrast, the relationship between attribution biases and approach-oriented coping may be more positive for incrementally-oriented theorists because they tend to view themselves as more active and powerful agents in exerting change over existing social outcomes. Thus, in the present study, the role of implicit self-theories as prospective moderators of the direct and indirect effects of shyness on coping will be examined using a simple moderation as well as a moderated mediation model.

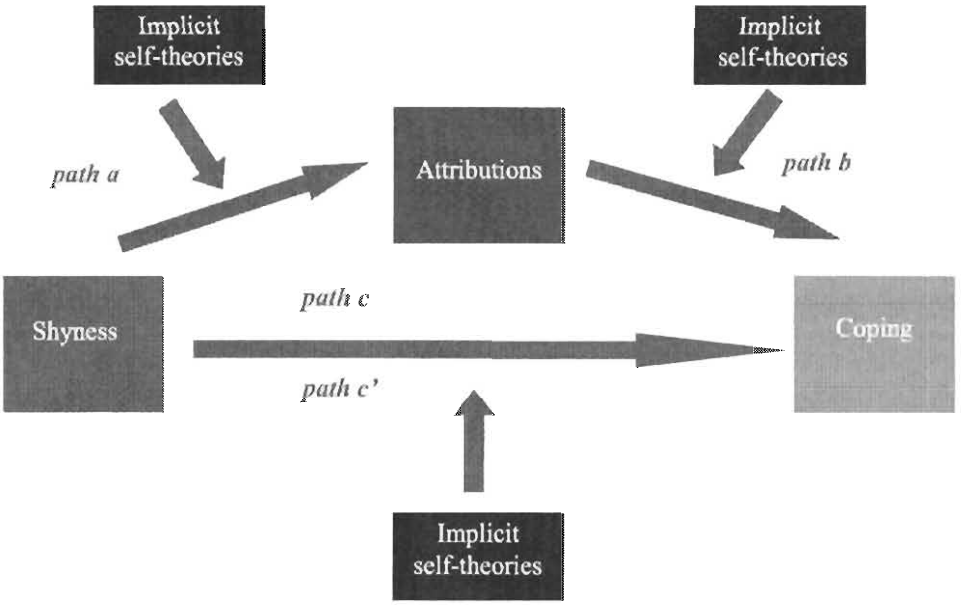

Figure 1. Proposed moderated mediation model between shyness, attributions, implicit self-theories and coping.

Gender and Social Coping

In addition to negative emotionality, cognitions, and self-theories of personality, gender is another factor that is related to the type of coping strategies adopted by young children. For example, Eschenbeck, Kohlmann, and Lohaus (2007) found that in late childhood, girls were more likely to use approach-oriented coping strategies, such as

social support seeking and problem-solving, whereas boys were more likely to rely on avoidance-oriented coping, such as distancing and externalization in response to social stressors. This relationship between gender and coping strategies was even stronger for adolescent girls and boys than children. Burgess et al. (2006) offered a slightly different perspective in their study, in which they found that girls were more likely than boys to rely on emotional coping coupled with inaction (e.g., feeling upset, but doing nothing about it) in response to negative interpersonal stressors.

Eisenberg et al. (1998) extended these findings further by revealing that there are also gender differences in the degree of assertive coping likely to be exhibited by shy boys and girls in socially distressing situations, with shy boys consistently displaying lower tendencies to pursue active forms of coping than shy girls. This evidence is extremely important because studies (e.g., Coplan, Prakash, O'Neil, & Armer, 2004; Rubin et al., 2009) have shown shyness to be more consequential for boys than girls. In comparison to shy girls, shy boys are more likely to experience peer exclusion and victimization, as well as greater socio-emotional difficulties, characterized by higher levels of loneliness, poorer social skills and lower self-esteem (Coplan et al., 2004; Rubin et al., 2009). These findings, then, emphasize the need to consider the role of gender in shy children's coping. Given that shy boys may be more likely to exhibit emotion-focused coping and experience more adjustment difficulties than shy girls, examining potential gender differences in coping and the relations between coping, attributions and implicit self-theories may offer some insight for the greater repercussions of shyness commonly observed in boys as opposed to girls.

Summary and hypotheses

Although shyness in children has generally been linked to avoidant social coping, little is known about the underlying factors that contribute to shy children's use of maladaptive coping. Even though past research has been informative about the nature of shy children's attributions, studies have not examined the functional role of these attribution biases on shy children's coping efforts. Furthermore, studies on beliefs about personality change in the context of shyness, social cognitions and actions have thus far been limited to adults. An integrated theoretical framework that can conceptualize the nature of the relationships between attributions, implicit self-theories of personality, and coping in shy children has not yet been established in literature. Therefore, in this study, I will examine interrelations between these variables using mediation, moderation, and moderated mediation models based on the following hypotheses:

Mediation model. First, there will be a direct effect of shyness on coping strategies, such that shyness will be positively correlated with avoidance-focused coping strategies (distancing and internalization) and negatively correlated with approach-oriented coping strategies (social support seeking and problem-solving). Given the inconsistencies in literature regarding the nature of the relationship between shyness and externalizing behaviour, these analyses will be largely exploratory, rather than based on a specific set of pre-determined predictions.

According to the mediational model, however, attributions will partially mediate the relationships between shyness and coping strategies as shown in Figure 1. In particular, greater levels of shyness will predict higher levels of negative attribution biases (e.g., internal, stable, global attributions for negative events and external, unstable, specific

attributions for positive events). Since attributions are scored in such a way that greater scores reflect greater positive attribution biases, shyness and attributions will be negatively correlated. Attribution biases, in turn, will predict greater levels of avoidance-focused coping strategies and lower levels of approach-oriented coping strategies. In other words, attributions will be strongly negatively correlated with avoidant-focused coping strategies and weakly positively correlated with approach-oriented strategies. Thus, the direct effect of shyness on coping strategies should be reduced once attributions are entered into the model. The data analytic strategy for testing these hypotheses is described in greater detail after the methods.

Moderation model. Direct bivariate relationships between shyness and coping will further be moderated by implicit self-theories, such that their strength of association will vary as a function of incremental and entity self-theories. Thus, implicit self-theories will moderate the positive relation between shyness and avoidance-focused coping, such that the positive correlation will be stronger for entity-oriented self-theorists and weaker for incrementally-oriented self-theorists. Additionally, the negative correlation between shyness and approach-focused coping will be stronger for entity-oriented self-theorists and weaker for incrementally-oriented self-theorists.

Moderated mediation model. The proposed mediational design between shyness, attributions and coping also will be moderated by implicit self-theories, such that the magnitude of the relationships between variables will vary depending on the level of implicit self-theory (see Figure 1).

First, implicit self-theories will moderate the indirect relations between shyness and coping (i.e., associations in the presence of attributions) as described above for the direct links in the simple moderation model.

Second, implicit self-theories will moderate the relationship between shyness and attributions, such that the negative relationship will be stronger for entity-oriented self-theorists and weaker for incrementally-oriented self-theorists.

Third, the negative correlation between attributions and avoidance-focused coping will be stronger for entity-oriented theorists and weaker for incrementally-oriented theorists. In contrast, the positive correlation between attributions and approach-focused coping will be stronger for incrementally-oriented theorists and weaker for entity-oriented theorists. The data analytic strategy for testing the moderation and moderated mediation models is also described following the methods section.

A secondary aim will be to discern whether any of these effects are further moderated by gender.

Importance of the Current Study

This study will contribute to current research literature by enhancing knowledge of the types of beliefs and cognitions underlying shy children's coping in social situations. In particular, by clarifying the relations between attribution biases, implicit self-theories and shy children's emotional and behavioural coping, I will identify which characteristics of children's shyness may be beneficial or disadvantageous for their coping with social situations. Delineating these factors could suggest that treatment, as well as prevention interventions, may need to consider modifying children's cognitive interpretations and self-theory biases, in addition to explicit teaching of coping strategies. Such findings

would not only benefit clinicians, but also educators, by providing guidelines on ways to enhance well-being of shy and socially anxious children.

Method

Participants

Participants included 175 children (93 boys) recruited from seven public schools in Eastern Ontario, Canada, as part of a larger study on social withdrawal. Children were from grades 4, 5 and 6, with a mean age of 10.11 (*SD* = 0.92, range 9 - 13). The demographic characteristics of the participants and their parents are listed in Table 1.

Measures

Children's Shyness Questionnaire. Children's Shyness Questionnaire (CSQ, Crozier, 1995) is a 25-item self-report measure of shyness for mid- to late-childhood children (see Appendix A and Table 2). The items capture a range of reactions, as well as situations previously identified by children as capable of eliciting feelings, thoughts and actions reflective of shyness. Emotional reaction items encompass sensations such as blushing and embarrassment; situational items incorporate exposure to novel or common situations involving teachers, adults, and other children, as well as scenarios such as performing in front of class, being made fun of or "told off," having one's photograph taken, school-friends looking at one's photograph, and going to a party or disco. Examples of items include "Do you blush a lot?" and "I feel shy when I have to go into a room full of people." For each item, children are asked to indicate the degree to which they endorse these statements along a 3-point scale (*yes*=3, *don't know* =2, *no* =1). Composite shyness scores are obtained from the mean of all the individual items, with higher scores reflecting greater levels of shyness. There was no missing data for the

composite scores. Crozier (1995) has shown internal consistency for CSQ to be high (α = .82); I found an even higher internal consistency (α = .86) in the present study.

Table 1. *Participant Demographic Characteristics*

Variables	*N*	Percentage
Child gender		
Boys	93	53.1
Girls	82	46.9
Child grade		
4	63	36.0
5	56	32.0
6	56	32.0
Parent ethnicity		
Mother ethnicity		
Caucasian	147	84.0
Hispanic	8	4.6
Asian	1	0.6
Other	6	3.4
Missing	13	7.4
Father ethnicity		
Caucasian	149	85.1
Hispanic	10	5.7
Asian	1	0.6
Other	2	1.1
Missing	13	7.4
Parent education (highest level)		
Mother education		
Elementary	6	3.4
High school	57	32.6
College	86	49.1
University	18	10.3
Graduate School	7	4.0
Missing	1	0.6
Father education		
Elementary	13	7.4
High school	59	33.7
College	71	40.6
University	23	13.1
Graduate School	6	3.4
Missing	3	1.7

N = 175

Table 2. *Summary of Measures*

Construct	Measure	Description	Factors
Shyness	Children's Shyness Questionnaire (Crozier, 1995)	25 self-report items tapping into cognitive, behavioural, and affective aspects of shyness: e.g., "I feel shy when I have to go into a room full of people." Children indicated the degree to which they endorsed each statement on a 3-point Likert scale – (1) *no*; (2) *don't know*; (3) *yes*	Higher score = higher shyness
Attributions	Children's Attributional Style Questionnaire – Revised (Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998)	24 forced-choice items (12 positive + 12 negative items) e.g., "A good friend tells you that he or she hates you." a. "My friend was in a bad mood that day." b. "I wasn't nice to my friend that day."	Positive composite score (CP) (i.e. score for positive attributions) Negative composite score (CN) (i.e., score for negative attributions) Overall attribution score; CP – CN - higher scores = positive attribution bias - lower scores = negative attribution bias
Implicit Self-Theories of Personality - Revised	Implicit Personality Theory Questionnaire - Revised (Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997)	3 Entity statements: e.g., "You have a certain personality, and it is something you can't do much about." Children indicated the degree to which they endorsed each statement on a 6-point Likert scale – (1) *really agree* to (6) *really disagree*	Higher implicit theory score = Higher entity endorsement
Coping with a social conflict	Self-Report Coping Scale ("How I cope?") – Modified (Causey & Dubow, 1992)	Children responded to each item on a 3-point Likert scale – (1) *no*; (2) *sometimes*; (3) *yes* – to the lead question, "If you got into a fight or argument with a friend, what would you do?"	Approach Scale: Seeking Social Support (8 items) Problem-Solving (8 items) Avoidance Scale: Distancing (7 items) Internalizing (7 items) Externalizing (4 items) Scores obtained for each of the subscales Higher score = higher endorsement of that particular coping strategy

Children's Attributional Style Questionnaire – Revised. The Children's Attributional Style Questionnaire – Revised (CASQ-R, Thompson et al., 1998) is a 24 forced-choice item self-report measure of attributional styles for 8-to 18-year-old children (see Appendix B and Table 2). Each item presents children with a hypothetical scenario, followed by two plausible explanations for why the event happened. Children are to choose the statement that they believe best justifies the event outcome. For instance, for a sample situation, such as "You get an A on a test," children are to indicate whether such an outcome is better validated by "I am smart" or "I am good in the subject the test was in." Of the total items, 12 address positive outcomes (e.g., "You make a new friend") and the other 12 address negative outcomes (e.g., "You fail a test"), with each item assessing one of the three attributional dimensions (internal-external, stable-unstable, global-specific). Table 2 provides a summary and an additional example from the questionnaire.

Separate composite scores are obtained for positive attributions (i.e., attribution of positive events to internal, stable, global factors) and for negative attributions (i.e., attribution of negative events to internal, stable, global factors). A positive composite score is derived by allocating a score of 1 to each of the 12 positive events for which a child makes an internal, stable, or global attribution, and a score of 0 for external, unstable, specific attributions. Similarly, a negative composite score is obtained by allocating 1 point to each of the 12 negative events for which a child makes an internal, stable, and global attribution, and a score of 0 for any of the opposite attributions. An overall composite score is computed from the difference between positive and negative composite scores (i.e., positive composite – negative composite). The overall composite score can range from -12 to 12, with lower scores indicating a more depressive attribution

style (i.e., attribution of positive events to external, unstable, specific causes, and negative events to internal, stable, global causes) (see Table 2 for a synopsis on scoring factors). It should be noted that the overall composite score was calculated only for those participants who answered at least 11 of the 12 items for positive and negative events. Thus, missing responses for one of the items on positive and/or negative events were considered random. Since these participants nevertheless had more than 90% of data present, their answers were included in calculations of overall composite scores. Individuals who omitted more than one question for either or both of the events, however, were coded as having missing data. Of the total sample, only 2 participants were missing data for the overall attributions composite. Psychometric evaluation of the CASQ-R by Thompson et al. (1998) in a sample of 9-12 year-olds revealed moderate internal consistency for the overall composite score ($\alpha = .62$). In the current study, the internal consistency was slightly higher, with an alpha coefficient of .64.

Implicit Personality Theory Questionnaire-Revised. The Implicit Personality Theory Questionnaire-Revised (IPTQ-R, Erdley et al., 1997) is a 3-item self-report measure of implicit self-theories of personality, or children's beliefs about the nature of their personality (see Appendix C and Table 2). The three entity statements included, "People can't really change what kind of personality they have. Some people have a good personality, and some don't and they can't change much," "Someone's personality is a part of them that they can't change very much," and "A person can do things to get people to like them, but they can't change their real personality." Children also responded to the three incremental items added by Beer (2002) to modify the original scale that included, "No matter who somebody is and how they act, they can always change their

ways," "Anybody can change their personality a lot," and "People can always change their personality." Children are asked to rate the extent to which they endorse each of the statements on a 6-point Likert scale from 1 (*strongly agree*) to 6 (*strongly disagree*).

In the present study, only responses to the entity items will be used in the analyses. Studies (e.g., Hong et al., 1999, Erdley et al., 1997) that employ the Dweck questionnaire in their methods typically exclude items depicting incremental self-theories because research in the achievement domain (e.g., Boyum, 1988; Dweck, Chiu & Hong, 1995a, 1995b; Hong et al., 1999) has shown that respondents who endorse entity items also tend to show a strong preference for incremental items, or drift towards their greater endorsement with succeeding questions. These authors have suggested that simultaneous inclusion of entity and incremental statements in the IPTQ-R may raise children's inclinations towards greater endorsement of incremental statements because they reflect more socially desirable views of people's personality. Thus, by considering solely entity statements, children who show strong endorsements of these statements are likely to be true entity self-theorists because they chose to endorse them, despite the availability of alternative, and plausibly more attractive, options. Similarly, children with true incremental self-theories should be more inclined to disagree with entity statements because they don't adequately depict their underlying personality beliefs (Erdley et al., 1997). Studies with college students (e.g., Dweck et al., 1995a, 1995b) have shown that respondents who disagreed with entity statements of intelligence gave clear incremental justifications for their responses, reinforcing the idea that disagreement with entity statements is representative of incremental self-beliefs. In terms of scoring, each of the three entity items were reverse coded (6 = *strongly agree* to 1 = *strongly disagree*), such

that higher mean composite scores reflect greater levels of entity self-theories. There was no missing data on the IPTQ-R for any of the participants. Previous research (e.g., Erdley et al, 1997) has shown that the 3-items in the IPTQ-R have good internal consistency (α = .75), whereas the internal consistency in the present study was somewhat lower (α = .66).

Self-Report Coping Scale. The Self-Report Coping Scale (SRCS, Causey & Dubow, 1992) is a 34-item self-report measure of children's coping strategies (see Appendix D and Table 2). Children indicated, on a 5-point Likert scale from 1 (*never*) to 5 (*always*), the degree to which they would use 34 different coping options in response to the following social dilemma, "When I have an argument with a friend, I usually..." The measure evaluated five coping sub-domains (i.e., seeking social support, problem-solving, distancing, internalizing, externalizing) underlying the broader conceptualization of approach- and avoidance-focused coping strategies. These five sub-categories have been shown to have moderate to high internal consistency (α = .68 to .84) in a fourth-to sixth-grade sample of children (Causey & Dubow, 1992).

As explained in the introduction, the present study is centered on children's degree of endorsement of lower-order coping strategies categorized within the broad approach/avoidance framework or separately (e.g., externalizing). The Approach scale included eight items reflecting seeking social support (α = .87) and eight items addressing problem-solving (α = .82) coping initiatives. The Avoidance scale included seven items assessing distancing (α = .64), seven items reflecting internalizing (α = .74), and four items evaluating externalizing (α = .75) coping efforts.

Separate composite scores were derived for each coping strategy by calculating the mean of at least 85% of subscale items classified as falling within one of the five lower-order coping strategies. In other words, mean scores for participants who had no missing data or no more than one unanswered item for any of the subscales, except externalizing (due to presence of only 4 items), were calculated. Greater mean scores were therefore indicative of greater endorsement of a particular coping strategy. Individuals who did not answer more than 15% of the questions or missed at least one question on the externalizing subscale were labelled as having missing data for that particular coping strategy. The 85% cut-off was chosen as a scoring system to minimize unnecessary loss of data because it allowed for inclusion of participants who may have arbitrarily skipped one of the items within the five questionnaire subscales. Of the total sample, the Approach scale was missing data for two participants on the seeking social support subscale, and one participant for the problem-solving subscale. With respect to the Avoidance scale, two participants were missing data on distancing and one participant on internalizing. For externalizing coping, there were six participants with missing data.

Procedure

Information letters describing the study, consent forms and demographic questions were delivered to parents of all fourth to sixth grade children in participating public schools via classroom teachers. Parents interested in the study provided information on demographic variables and gave informed consent for their child's participation. At each of the schools, all of the signed forms and background information were collected by teachers, from whom they were obtained by research assistants.

Children whose parents provided written consent were additionally asked for verbal assent to participate in the study. Subsequent to collection of parental consent and child assent, the testing was conducted in two classroom sessions. During the first session, which commenced in late winter, children were administered a questionnaire package consisting of CSQ, CASQ-R, IPTQ-R, and other self-report measures not included in the current study. The second testing session was conducted in mid-spring, approximately a month after the initial session. Children were then administered a questionnaire package consisting of SRCS and additional self-report measures not included in the present study. Both testing sessions were conducted in a group format. During testing, trained research assistants read questions aloud and provided children with any necessary assistance. However, each child completed the questions primarily on an independent basis.

It should be noted that of children participating at Time 1, 89.3% of the children also participated at Time 2, indicating that the attrition rate of children in this study was 10.7%. In addition, 22 additional children participated at Time 2, who had not participated at Time 1. Prior to the main analyses, I tested whether there were substantial differences between these groups of children. The results are presented in the first section of the Results.

Data Analysis

Prior to the main analyses, several demographic variables were considered as possible covariates, including child age, gender, and parental education. If a strong relationship was established between any of these variables and shyness, attributions, personality self-theories and/or coping strategies, these variables were to be partialled out of the main analyses by including them in the first step of each of the regression models

described below. As such, the other variables and interactions were to be entered on subsequent steps, starting with step 2.

Mediation model. To test the hypothesis that attributions would partially mediate the effect of shyness on coping strategies, the criteria outlined by Baron and Kenny (1986) for establishing mediation using multiple regression techniques was used. According to their statistical principles, the first step was to demonstrate the existence of a significant direct relationship between shyness and each of the five coping strategies designated as dependant variables (DV) (Baron & Kenny, 1986). As part of the second analytic step, shyness and attributions were to be shown to be significantly associated. In the third step, a significant direct relationship between attributions and each of the coping strategies was to be demonstrated in the presence of shyness as a simultaneous predictor. The final step of the analyses was to show that the strength of the relation between shyness and a particular coping strategy was significantly reduced upon addition of attributions in step 3 (Baron & Kenny, 1986). In order to establish partial mediation, the indirect effect of shyness on a particular coping strategy, while controlling for attributions (tested in the third step) needed to be significantly smaller than the total effect of shyness on a particular coping strategy shown in the first step (Baron & Kenny, 1986). Thus, it is important to note that it was not sufficient to simply demonstrate that the relationship between shyness and a coping strategy decreased or was no longer significant when attributions were added to the model. Rather, it was necessary to estimate the significance of the mediated effect as well (Frazier, Tix, & Barron, 2004; McCartney, Burchinal, & Bub, 2006).

At this point, it should also be noted that all three regression steps were carried out, even in the absence of a significant direct relationship between shyness and a particular coping strategy in the first step. Preacher and Hayes (2004; 2008) suggested that it is possible to find a significant indirect effect, even when a simple bivariate relationship between the independent variable (IV) and DV is not initially present. MacKinnon, Fairchild, and Fritz (2007) extended these arguments further by stating that the requirement for a significant IV to DV relation in the Baron and Kenny method significantly reduces the power to detect mediation because there may be many instances in which a significant indirect effect exists in the absence of a significant relation between the IV and DV. Thus, these considerations were incorporated into the current mediation analyses, in which I examined the plausible presence of both mediated and indirect effects. This allowed for a more thorough examination of potential relationships that may have existed between each of the variables in the mediated model.

Recently, there has been much criticism in literature (e.g., MacKinnon, Lockwood, Hoffman, West, & Sheets 2002; MacKinnon, Lockwood, & Williams, 2004; MacKinnon et al., 2007; McCartney et al., 2006; Preacher & Hayes, 2004; Wu & Zumbo, 2008) over the appropriate techniques for establishing the significance of the mediated effect, particularly through the use of the Sobel test. According to these critics, the distribution of the indirect effect (i.e., the products *ab* or *c-c'* shown in Figure 1) typically departs from a normal distribution and is therefore highly asymmetric, showing a positive skew with a high kurtosis. On the basis of these premises, tests for establishing significance of a mediated effect that rely on the assumption of normality, such as the Sobel test, have low statistical power to detect mediation, particularly for small sample sizes (i.e., $N < 400$)

(MacKinnon et al., 2002; McCartney et al., 2006; Preacher & Hayes, 2008; Preacher, Rucker, & Hayes, 2007; Wu & Zúmbo, 2008). Thus, a recent approach that is gaining more popularity in literature for estimating the significance of a mediated or indirect effect is bootstrapping, which is a nonparametric form of a test that makes no assumptions about the shape of the sampling distributions from which we derive our statistics (Preacher & Hayes, 2004; Preacher et al., 2007).

Bootstrapping involves taking a large number of samples of size N (i.e., in this case $N = 174$) from the raw data file and sampling with replacement to estimate the value of the indirect effect and standard error for each observation. Based on the results of the samples, the program sorts the values for all indirect effects in ascending order to create its own sampling distribution of the indirect effect (i.e., *ab*) and derive the lower and upper values of the 95% confidence interval (i.e., the 2.5^{th} and 97.5^{th} percentiles of the new distribution). The single estimate for the indirect effect and standard error obtained from the procedure is based on the mean values calculated from repeated observations (McCartney et al., 2006; Preacher & Hayes, 2004; Preacher & Hayes, 2008). In order to determine if the value of the indirect effect is significantly different from zero at the $p < .05$ level (i.e., we can correctly reject the null hypothesis of no mediation), the bootstrapped value of the indirect effect must be different from zero, as well as, the 95% confidence interval must not encompass zero (McCartney et al., 2006; Preacher & Hayes, 2004; Preacher & Hayes, 2008).

Thus, in the current analyses, the bootstrapping procedures outlined above were employed, using Preacher and Hayes' (2008) macro, to establish the significance of the mediated effect. The most recent version of the macro also incorporates a bias-corrected

bootstrapping approach, which makes an adjustment in the central tendency of the empirically-derived distribution by ensuring that the confidence intervals are not necessarily equidistant from the indirect effect point estimate, but rather centered in accordance with the asymmetric nature of the distribution (McCartney et al., 2006; Preacher & Hayes, 2008). The bias-corrected bootstrapping has been shown to be the most powerful statistical technique for estimating confidence limits of indirect paths, and thereby a most accurate means of detecting mediated effects in small and moderate samples (McCartney et al., 2006; Preacher & Hayes, 2008; Wu & Zumbo, 2008).

Moderation model. In order to determine if personality self-theories moderate the direct relationship between shyness and coping specified by the mediated model, a series of hierarchical multiple regression analyses specified by Baron and Kenny (1986) was used. To examine these hypotheses, each of the five coping strategies (i.e., social support seeking, problem-solving, distancing, internalizing, externalizing) was regressed on shyness and personality self theories (step 1), followed by the two-way interaction between personality self-theories and shyness (step 2). It should be noted that the moderation model was tested using all five coping strategies, rather than only those strategies for which potential mediation effects were established as in the third model. Testing for potential effects using all DVs helped discern if any potentially non-mediated, direct, bivariate relationships between shyness and coping strengthened, weakened, or existed solely under certain circumstances (e.g., particular level of personality self-theories).

Moderated mediation model. To investigate if personality self-theories moderate the indirect relation between shyness and coping, via the mediating role of

attributions as displayed in Figure 1, two different hierarchical regression models were tested. The aim of the first regression model was to determine if the relationship between shyness and attributions (i.e., path *a*) is moderated by personality self-theories. Thus, in this regression model, attributions were regressed on shyness and personality self-theories on step 1, followed by the two-way interaction between shyness and personality self-theories on step 2.

The goal of the second regression model was to test the hypothesis that personality self-theories would moderate the relationship between attributions and each of the coping strategies for which a mediated effect was established (i.e., path *b*). To test these postulations, each coping strategy was regressed onto shyness, attributions, personality self-theories (step 1), followed by the two-way interactions between shyness and personality self-theories, shyness and attributions, attributions and personality self-theories (step 2), as well as, the three-way interaction between shyness, attributions and personality self-theories (step 3). For moderated mediation to be established, at least one of these two- or three-way interactions needed to be significant (Baron & Kenny, 1986).

Gender effects. In order to discern if there are gender differences for any of the proposed effects outlined by the overall model shown in Figure 1, four separate models were tested using similar hierarchical regression procedures as outlined above.

Mediation model. The aim of the first model was to determine if the indirect effect of shyness on coping is moderated by gender through paths *a* or *b*, in the absence of personality self-theories as a prospective moderator. To investigate if gender would moderate any of these effects, identical statistical steps outlined by Baron and Kenny

(1986) were undertaken as those described above for testing the simple moderation models using gender, rather than personality self-theories, as the moderator.

Moderation model. The goal of the second regression model was to investigate if the simple moderation model would differ on the basis of gender. To test the role of gender as a prospective moderator in this model, the original hierarchical regression model was modified to include gender as a predictor in step 1, and moderator in two- and three-way interactions in steps 2 and 3.

Moderated mediation model. To determine if the moderated mediation model displayed in Figure 1 is further moderated by gender, a more complex three-step hierarchical regression analysis was conducted. First, to test if gender moderated the relation between shyness and attributions (i.e., path *a*), identical statistical steps outlined by Baron and Kenny (1986) were undertaken as those described above for testing the simple moderation model, using gender in conjunction with personality self-theories as moderators and attributions, rather than coping strategies, as the DV.

To further test the hypothesis that gender would moderate the relation between attributions and coping (i.e., path *b*), each coping strategy for which a mediated effect was originally established was regressed onto shyness, attributions, personality self-theories and gender (step 1), followed by the two-way interactions between shyness and attributions, shyness and personality self-theories, shyness and gender, attributions and personality self-theories, attributions and gender, as well as personality self-theories and gender (step 2), and three-way interactions between shyness, attributions and personality self-theories, shyness, attributions and gender, as well as attributions, personality self-theories and gender (step 3). Revelation of a statistically significant effect for any of the

two- or three-way interactions that include gender as a variable would indicate that the bivariate relations between shyness and attributions, and/or attributions and coping displayed in Figure 1 operate differently in girls and boys (Baron & Kenny, 1986). Post-hoc analyses for two- and three-way interactions were carried out using computational tools by Preacher, Curran, and Bauer (2006). Specifically, interactive effects were probed by conducting simple slopes analyses to determine the way in which the predictive capacity of an IV on a DV differs as a function of different levels of the moderator (e.g., incremental vs. entity; boys vs. girls). The levels of the moderator were designated to reflect one standard deviation below the mean, and one standard deviation above the mean, respectively.

Results

Missing Data

Prior to the main analyses, I examined whether there were significant differences between children who participated at both time assessments and those who only completed the CSQ, CASQ-R, and IPTQ-R at Time 1 or the SRCS at Time 2. A Missing Values Analysis was conducted to determine if there were systematic differences on age, gender, mother's education, father's education, shyness, attributions, personality theories and each of the five coping strategies, as a function of missing data at each of the two time points. Results indicated that there were systematic differences between children who are missing and not missing data on social support ($p = .007$), problem-solving ($p = .003$), distancing ($p = .007$), internalizing ($p = .015$) and externalizing ($p = .036$) coping with respect to age only, such that children who are missing data on these variables were slightly older. In other words, children who completed questionnaires at Time 1 only

(and/or are missing data on these coping variables at Time 2) were older than those children who completed the SRCS at Time 2 or both sets of questionnaires. However, a closer examination of the mean difference in age between children who participated at Time 1 (M = 10.70 years) and those who were missing data at Time 2 (M = 10.10 years) revealed that the mean difference in age across the coping strategies was approximately 7 months. Given that this age difference was solely related to missing data on the DVs, age was not considered as a covariate in the final analyses. There were no systematic differences for any of the other variables.

Preliminary Analyses

The mean, standard deviation and range for all the variables are shown in Table 3. Several demographic variables were considered as possible covariates by examining the zero-order correlations between age, gender, mother and father's education with shyness, personality self-theories, attributions and each of the five coping strategies. Zero-order correlations depicting the direction and magnitude between these variables are represented in Table 4.

As shown in Table 4, gender emerged as the only demographic variable with consistently significant relationships between the predictor and criterion variables. Although it was not significantly related to attributions, it was significantly associated with shyness, personality self-theories and four of the five coping strategies (excluding internalizing coping). On the basis of these relationships, it was deemed necessary to partial gender out of the main analyses by including it in step 1 of each of the regression models described below. None of the other demographic variables showed consistent

Table 3. *Means and Standard Deviations for Co-variates, Predictor, Moderator, Mediator, and Criterion Variables (N = 164)*

	Scores				
	M	*SD*	*Range*	*Skewness*	*Kurtosis*
Potential Co-variates					
Age	10.13	0.91	9-13	0.32	-0.65
Gender	1.47	0.50	1-2	0.13	-2.01
Mother's education	2.77	0.85	1-5	0.48	0.61
Father's education	2.73	0.92	1-5	0.29	0.01
Predictor, moderator and mediator variables					
Shyness	1.85	0.37	1.00-2.80	0.03	-0.42
Personality theories[a]	4.50	0.94	1.00-6.00	-0.84	0.84
Attributions	5.15	3.24	-9.00-12.00	-0.75	1.55
Criterion variables					
Social support coping	3.00	0.83	1.00-5.00	-0.09	-0.36
Problem-solving coping	3.29	0.69	1.12-4.75	-0.32	0.27
Distancing coping	2.83	0.64	1.29-4.57	0.36	-0.03
Internalizing coping	2.48	0.69	1.00-4.43	0.31	0.01
Externalizing coping	2.15	0.91	1.00-5.00	0.65	-0.27

Note. Gender (1 = boys, 2 = girls); Parental Education (1 = elementary school, 2 = high school, 3 = college, 4 = university, 5 = graduate school)
[a]Higher scores = greater entity orientation

significant correlations with the independent, moderator, mediator or dependent variables in the model, and were thus not included as covariates in subsequent analyses.

Of note in Table 4, however, is that shyness and personality self-theories shared approximately 2.89% of the variance, suggesting that shyer children were more likely to adopt an entity-orientation of their personality relative to their less shy counterparts.

Each of the variables in the study also was examined for potential univariate outliers by evaluating the degree of deviation of z-scores from |3|. Visual examination of scores for all of the variables revealed the presence of a total of 5 univariate outliers on attributions, personality self-theories, problem-solving, distancing and externalizing, with

Table 4. *Correlations between Demographic, Predictor, Moderator, Mediator, and Criterion Variables (N = 164)*

	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Mother's education	-.14	--									
3. Father's education	-.00	.39**	--								
4. Shyness	-.04	.09	-.04	--							
5. Personality theories[a]	.00	-.08	-.01	.17*	--						
6. Attributions	-.16*	-.00	-.03	-.22**	-.02	--					
7. Social support	-.26**	.09	-.11	-.17*	.04	.29**	--				
8. Problem-solving	-.18*	.12	.01	-.20*	-.01	.28**	.70**	--			
9. Distancing	-.05	-.18*	.01	.02	.04	-.03	.01	.21**	--		
10. Internalizing	-.06	.08	-.13	.38**	.14	-.08	.28**	.19*	.12	--	
11. Externalizing	.00	.03	-.02	.23**	.03	-.27**	-.21**	-.37**	.08	.33**	--

Note. $*p \leq .05$, $**p \leq .01$

[a]Higher scores = greater entity orientation

z-score values ranging from -4.29 to 3.20. Given that these were the only outliers, and their degree of deviation from |3| was not substantial, these participants were left in the final analyses. By doing so, the loss of further data was prevented, as well as the possibility of having additional univariate outliers emerge as a consequence of score omission for identified participants.

With respect to normality, visual screening of descriptive statistics revealed high congruency among the mean, median and mode for each of the potential co-variate, independent, mediator, moderator and dependent variables. Further examination of the values for skewness and kurtosis indicated that the values were consistently less than |2| for all variables, suggesting that the distributions were not substantially kurtotic or skewed. Consideration of histograms reinforced this conclusion, by showing distributions of each variable within normal parameters.

Residuals. As an extension of preliminary analyses, a careful analysis of residuals was conducted to determine whether each of the specified models met the underlying assumptions of normality, homoscedasticity and model specificity. For each of the models, visual examination of the histogram and normal P-P plot of standardized residuals revealed that they were approximately normally distributed, suggesting that there were no violations of the normality assumption.

Second, examination of the plot between standardized residuals and standardized predicted values for each of the models showed that the residuals were relatively equally distributed amongst the four quadrants, indicating that the assumption regarding homoscedasticity was also satisfied.

Third, to determine if each of the regression models included all the relevant predictors and, thus, the extent to which they were correctly specified, scatterplots between ID number and standardized residuals for each model were taken into careful consideration (Howell, 2007). Absence of a linear relationship between ID and standardized residuals suggested that there were no additional variables that should have been included in the final analyses. It should also be noted that these conclusions are further supported by the fact that heteroscedasticity did not seem to pose a problem, which can often be a result of unspecified variables in the model.

Main Analyses

Mediation model. To test the hypotheses that attributions would partially mediate the effect of shyness on each of the five coping strategies, three separate hierarchical regression models were run for each individual coping strategy as the dependent variable in the mediation model. Mediation was assessed following criteria established by Baron and Kenny (1986). For each analysis, gender was entered in step 1 to control for its plausible effects on attribution or coping styles. In the first regression model, which tested the direct effect of shyness on coping, each of the five coping strategies (i.e., social support seeking, problem-solving, distancing, internalizing, and externalizing) was regressed on shyness in step 2. In the second regression model, which assessed the direct effect of shyness on attributions, attributions were regressed on shyness, over and above gender. The third regression model evaluated the indirect effect of shyness on coping in the presence of attributions. Therefore, each coping strategy was regressed on attributions and shyness, which were entered as simultaneous predictors in step 2, after gender. The results of the mediation analyses are represented in Table 5.

Since the effects of gender on each of the coping strategies will be examined in simple moderation and moderated mediation models, these results are not shown in Table 5. However, they will be presented and considered in greater detail in subsequent analyses (see Table 6).

Table 5. *Regression Models Testing the Mediated Effect of Attributions on the Relationship between Shyness and Coping Strategies over and above Gender*

Predictor	*B*	*SE*	*β*	*sr²*	ΔR^2	ΔF	*df*	*p*	*Criterion*
Model 1	Direct effect of Shyness on Coping Strategies								
Shyness	-0.44**	.17	-.20	.04	.04	6.90	1, 170	.009	Social Support
Shyness	-0.40**	.14	-.22	.05	.05	8.38	1, 171	.004	Problem Solving
Shyness	0.08	.13	.05	.00	.00	0.41	1, 170	.524	Distancing
Shyness	0.74***	.13	.40	.15	.15	31.45	1, 171	.000	Internalizing
Shyness	0.77***	.18	.31	.09	.09	18.39	1, 166	.000	Externalizing
Model 2	Direct effect of Shyness on Attributions								
Shyness	-1.58*	.65	-.18	.03	.03	5.84	1, 190	.017	Attributions
Model 3	Indirect effect of Shyness on Attributions								
Shyness	-0.32*	.17	-.14	.02	.11	11.33	2, 167	.000	Social Support
Attributions	0.07***	.02	.28	.07					
Shyness	-0.31*	.14	-.16	.02	.11	11.18	2, 168	.000	Problem-Solving
Attributions	0.06***	.02	.27	.07					
Shyness	0.09	.14	.05	.00	.00	0.25	2, 167	.782	Distancing
Attributions	0.00	.02	.00	.00					
Shyness	0.74***	.14	.40	.14	.15	15.02	2, 168	.000	Internalizing
Attributions	0.00	.02	.02	.00					
Shyness	0.64***	.18	.26	.06	.13	12.71	2, 164	.000	Externalizing
Attributions	-0.06**	.02	-.20	.04					

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

The first model in Table 5 shows that, with gender controlled, shyness was significantly and negatively associated with social support seeking [$F(2,170) = 7.88$, $R^2 = .09$, $p = .001$] and problem-solving [$F(2,171) = 6.83$, $R^2 = .07$, $p = .001$], and significantly positively associated with internalizing [$F(2,171) = 17.42$, $R^2 = .17$, $p < .001$]. Interestingly, there was also a significant positive relation between shyness and externalizing [$F(2,166) = 15.88$, $R^2 = .16$, $p < .001$] coping. Although the results of the regression model for distancing coping were significant, $F(2,170) = 3.31$, $R^2 = .04$, $p = .039$, these findings appeared to originate from the effects of gender, rather than a significant association between shyness and distancing coping.

Results of model 2 further demonstrated the existence of a significant negative relationship between shyness and attributions [$F(2,192) = 3.28$, $R^2 = .17$, $p = .040$], in the presence of gender as a control variable. This finding suggested that greater levels of shyness were associated with a more negative attributional style.

As predicted, Model 3 revealed that the predictive strength of shyness, while controlling for the effect of attributions (and gender in step 1), decreased for social support seeking [$F(3,167) = 10.78$, $R^2 = .16$, $p < .001$] and problem-solving [$F(3,168) = 9.32$, $R^2 = .14$, $p < .001$], albeit remaining significant. Interestingly, the same pattern of results was found for externalizing [$F(3,164) = 12.77$, $R^2 = .19$, $p < .001$] coping only. In contrast, the third regression model was not significant for distancing coping, $F(3,167) = 2.27$, $R^2 = .04$, $p = .082$. Although a significant positive relationship between shyness and internalizing coping was established in the first model, the absence of a significant relationship between attributions and internalizing, as well as, the lack of decrease in the size and significance of the effect of shyness on internalizing in the third model [$F(3,168)$

= 11.25, R^2= .17, p < .001], precluded the possibility of an indirect or mediated effect between these variables. Nonetheless, these speculations were tested for empirical support.

As discussed in the data analysis section, the significance of the indirect effect for social support seeking, problem-solving, internalizing, and externalizing was tested using Preacher and Hayes' (2008) bootstrapping macro. The value, standard error and confidence intervals for the indirect effect were derived on the basis of 10,000 bootstrapping resamples (N ~174) for each analysis. Results of the analyses revealed that the effects of shyness on social support (ab = -.13, SE = .07, $CI_{.95}$ = -.295, -.031), problem solving (ab = -.11, SE = .05, $CI_{.95}$ = -.234, -.029), and externalizing (ab = .11, SE = .06, $CI_{.95}$ = .013, .258) coping were all partially mediated by attributions at the p < .05 level. In other words, since none of the bootstrapped-derived confidence intervals overlapped zero, the results suggested that the value of the indirect effect for these coping strategies was significantly different than it would be assumed under the null hypothesis (i.e., ab = 0). It is also noteworthy that the results of bootstrapping confirmed my abovementioned speculations by indicating that the effect of shyness on internalizing coping (ab = -.13, SE= .07, $CI_{.95}$ = -.076, .076) was not partially mediated at p < .05 level.

At this point it should be mentioned that the values of the indirect effect for social support seeking, problem-solving and externalizing coping were reassessed using the Sobel test (Barron & Kenny, 1986). Partial mediation was only confirmed for social support seeking (p = .046), but not problem-solving (p = .058) or externalizing coping (p = .058). Although the Sobel test is considered less powerful in detecting mediation effects for small to moderate samples (e.g., MacKinnon et al., 2002; McCartney et al.,

2006; Preacher & Hayes, 2008; Preacher et al., 2007; Wu & Zumbo, 2008), these discrepant findings nevertheless warrant caution upon interpretation of the abovementioned results.

Taken together, hypotheses predicting a partially mediated effect of attributions on the negative relationship between shyness and approach-oriented coping (social support and problem-solving) were supported. In contrast to my expectations, the positive effect of shyness on internalizing coping was not partially mediated by attributions. Furthermore, shyness and distancing coping were unrelated. Exploratory analyses revealed a partially mediated effect of attributions on the positive association between shyness and externalizing coping[1].

Moderation model. A series of five separate hierarchical regression models were conducted to test the hypothesis that personality self-theories of personality would moderate the bivariate relationship between shyness and each of the coping strategies (i.e., social support seeking, problem-solving, distancing, internalizing, and externalizing). Prior to the analyses, all of the predictors were also centered to reduce potential repercussions of multicollinearity on the results. Rather than controlling for gender, as in the mediation model, gender was now included in each of the regression models as a prospective moderator to determine if any of the relationships between shyness, self-theories and coping differed for boys and girls. Thus, each of the five coping strategies was regressed on shyness, gender and self-theories (step 1), followed by two-way interactions between shyness and self-theories, shyness and gender, and self-theories and

[1] There may be multiple ways to theoretically conceptualize the mediation model (e.g., shyness to coping to attributions). Therefore, it is noteworthy that the main model on the whole was analyzed in conjunction with several other plausible mediation models. However, none of the alternative representations proved to be as empirically sound as the main model.

gender (step 2). Next, the three-way interaction between shyness, gender and self-theories were entered (step 3). Results of the analyses for each of the five regression models are depicted in Tables 6 and 7, which present findings for approach and avoidance-oriented coping strategies respectively.

Social support seeking. Results indicated that, overall, the regression model accounted for 12.5% of the variability in social support seeking, $R^2 = .13$, $F(7, 165) = 3.36$, $p = .002$. Specifically, shyness and gender emerged as the strongest unique predictors of social support seeking, such that lower levels of shyness and being a girl were associated with greater endorsement of social support. Personality self-theories, however, did not emerge as significant unique predictors of social support seeking.

As shown in Table 6, the three-way interaction between shyness, gender, and personality self-theories also significantly predicted social support coping. Post-hoc analyses (Preacher et al., 2006) revealed that personality self-theories moderated the relationship between shyness and social support seeking differently for boys and girls. As shown in Figure 2, shyness was most strongly negatively related to social support among boys with more incremental self-views ($B = -0.75$, $p = .007$) and girls with more entity self-views ($B = -0.73$, $p = .030$). There was no relation between shyness and social support for entity-oriented boys or incrementally-oriented girls.

Thus, the hypothesis that the negative relation between shyness and social support coping would be stronger for entity-oriented personality theorists was supported, but for girls only. Contrary to initial postulations, the relationship between shyness and social support coping was weaker, rather than stronger, for incrementally-oriented boys.

Table 6. *Summary of Hierarchical Multiple Regression Analysis for Shyness, Personality Self-theories, and Gender Predicting Approach-focused Coping Strategies.*

	Social Support Seeking ($N = 173$)							Problem-Solving ($N = 174$)						
Predictors	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*
Step 1				.09	5.22	3, 169	.002				.07	4.54	3, 170	.004
Shyness	-0.37**	.17	.04					-0.35**	.15	.04				
Gender	0.45***	.13	.06					0.32**	.10	.04				
Personality theories[a]	0.02	.07	.00					-0.01	.06	.00				
Step 2				.02	1.18	3, 166	.318				.03	2.03	3, 167	.111
Shyness x Personality	-0.02	.20	.00					-0.06	.16	.00				
Shyness x Gender	0.06	.35	.00					-0.20	.29	.00				
Gender x Personality	-0.25	.14	.02					-0.24*	.12	.03				
Step 3				.02	3.91	1, 165	.050				.02	4.28	1, 166	.040
Shyness x Gender x Personality	-0.80*	.40	.02					-0.69*	.33	.02				

Note. Gender (1 = boys, 2 = girls)
*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$
[a]Higher scores = greater entity orientation

Table 7. *Summary of Hierarchical Multiple Regression Analysis for Shyness, Personality Self-theories, and Gender Predicting Avoidance-focused and Externalizing Coping Strategies.*

	Distancing (N = 173)							Internalizing (N = 174)							Externalizing (N = 169)						
Predictors	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*
Step 1				.04	2.44	3, 169	.067				.17	11.78	3, 170	.000				.16	10.68	3, 165	.000
Shyness	0.04	.14	.00					0.79***	.14	.14					0.80***	.19	.09				
Gender	-0.27**	.10	.04					0.08	.10	.00					-0.61***	.08	.10				
Personality theories[a]	0.04	.05	.00					0.07	.06	.00					0.06	.08	.00				
Step 2				.01	0.84	3, 166	.475				.03	2.12	3, 167	.099				.04	2.56	3, 162	.057
Shyness x Personality	0.10	.15	.00					0.25*	.16	.02					0.06	.22	.00				
Shyness x Gender	0.37	.28	.01					0.07	.28	.00					-0.78*	.39	.02				
Gender x Personality	-0.01	.11	.00					0.05	.11	.00					0.26	.15	.01				
Step 3				.01	1.24	1, 165	.266				.01	1.05	1, 166	.307				.00	0.32	1, 161	.570
Shyness x Gender x Personality	0.35	.32	.01					-0.33	.32	.01					-0.26	.46	.00				

Note. Gender (1 = boys, 2 = girls)
*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$
[a]Higher scores = greater entity orientation

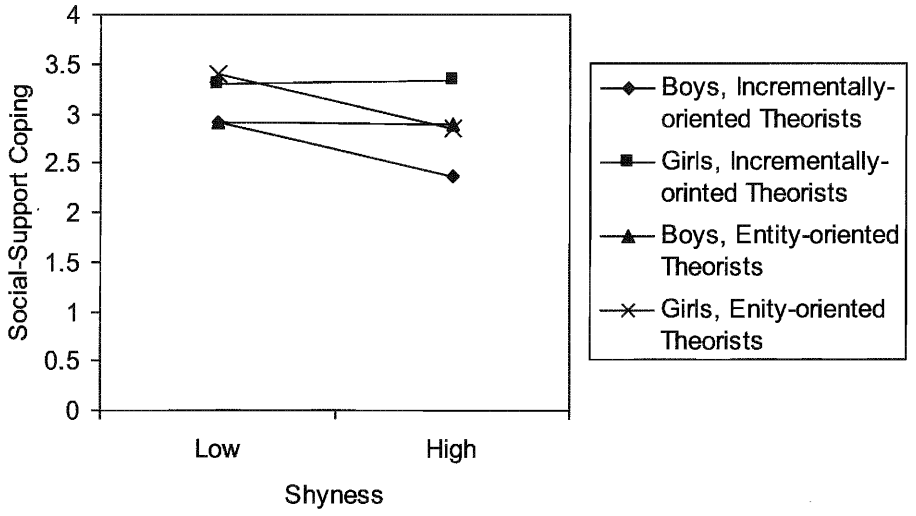

Figure 2. Interaction between shyness, gender, and personality theories in predicting social support coping.

Problem-solving coping. With respect to problem-solving, results indicated that, overall, the regression model accounted for 12.9% of the variability in problem-solving, $R^2 = .13$, $F(7, 166) = 3.52$, $p = .002$. As with social support seeking, shyness and gender emerged as the strongest unique predictors, such that lower levels of shyness and being a girl were associated with greater endorsement of problem-solving coping. There was no main effect of personality self-theories on problem-solving coping.

Although Table 6 further shows that the two-way interaction between gender and personality self-theories was significant at the $p \leq .05$ level, these results cannot be considered interpretable because the overall interaction step failed to reach trend level significance (i.e., $p \leq .10$). In order to protect the Type I error rate, the interaction will not be considered in further detail (Cohen, Cohen, West, & Aiken, 2003, p. 188).

Table 6 also reveals the presence of a significant three-way interaction between shyness, gender, and personality self-theories in the prediction of problem-solving. Post-

hoc analyses (Preacher et al., 2006) revealed that personality self-theories moderated the relationship between shyness and problem-solving coping differently for boys and girls. As shown in Figure 3, shyness was most strongly negatively related to problem-solving among boys with more incremental self-views (B = -0.53, p = .021) and girls with more entity self-views (B = -0.83, p = .003). However, the relationship between shyness and problem-solving coping did not vary for entity-oriented boys and incrementally-oriented girls at greater levels of shyness.

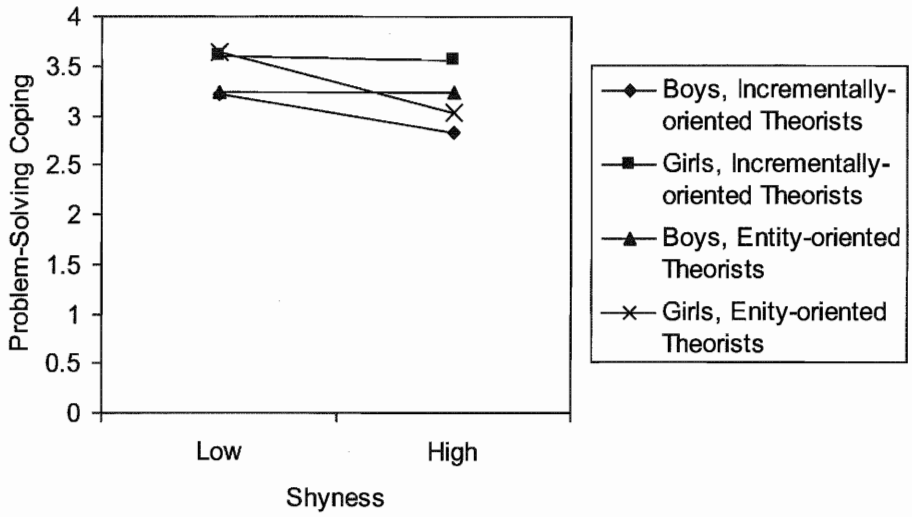

Figure 3. Interaction between shyness, gender, and personality theories in predicting problem-solving coping.

Thus, the hypothesis that the negative relationship between shyness and problem-solving coping would get stronger for entity-oriented personality theorists was supported, but for girls only. Interestingly, the postulation that the negative relation between shyness and problem-solving coping would get weaker for incrementally-oriented theorists was not supported. Rather, the findings challenged these assumptions by showing a stronger correlation between shyness and problem-solving for incrementally-oriented boys.

Distancing. Results indicated that, overall, the regression model accounted for 6.3% of the variability in distancing, $R^2 = .06$, $F(7, 165) = 1.58$, $p = .145$. In particular, gender was the best unique predictor of distancing coping, such that boys exhibited a significantly stronger tendency to engage in distancing coping than girls. As shown in Table 7, none of the other variables or interactions significantly predicted distancing coping. Thus, the hypothesis predicting that the positive relationship between shyness and avoidance-focused coping would be moderated by personality self-theories could not be empirically supported for distancing coping.

Internalizing. With respect to internalizing coping, the overall regression model accounted for 20.8% of the variability in internalizing, $R^2 = .21$, $F(7, 166) = 6.21$, $p < .001$. Shyness emerged as the strongest unique predictor of internalizing coping, such that greater levels of shyness predicted greater endorsement of internalizing coping in negative interpersonal situations. As with approach-focused coping, personality theories did not significantly predict internalizing coping initiatives as a main effect.

As shown in Table 7, the two-way interaction between shyness and personality self-theories was also a significant predictor of internalizing coping. It should be noted, however, that the step which qualifies this interaction was only significant at the trend level, and thus, these findings should be interpreted with caution. Results of post-hoc analyses (Preacher et al., 2006) examining the regression of internalizing coping on shyness for incremental and entity self-theories are plotted in Figure 4. As shown in Figure 4, personality self-theories moderated the relationship between shyness and internalizing coping, such that the use of internalizing coping increased to a greater

degree for entity-oriented ($B = 1.02, p < .001$) than incrementally-oriented ($B = 0.56, p < .001$) theorists. None of the other two-way or three-way interactions were significant.

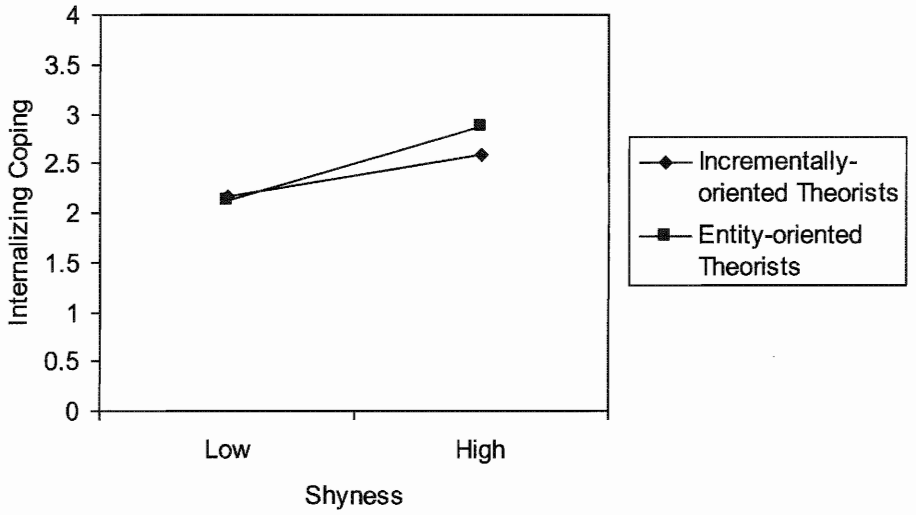

Figure 4. Interaction between shyness and personality theories in predicting internalizing coping.

Therefore, the postulation that the positive relationship between shyness and avoidance-focused coping would be stronger for entity-oriented and weaker for incrementally-oriented personality self-theorists was supported for internalizing coping.

Externalizing. Finally, exploratory analyses revealed that the regression model accounted for 20.2% of the variability in externalizing coping, $R^2 = .20$, $F(7, 161) = 5.83$, $p < .001$. In fact, both shyness and gender emerged as significantly strong predictors of externalizing coping, by suggesting that shyer children and boys exhibited a greater tendency to cope through externalizing than did less shy children or girls (see Table 7).

In addition, there was a significant two-way interaction between shyness and gender, suggesting that the relationship between shyness and externalizing differed for boys and girls. Since the step that qualified the interaction only reached trend level

significance, these findings also warrant caution upon interpretation. Results of simple slope analyses (Preacher et al., 2006), depicted in Figure 5, revealed a significant positive relation between shyness and externalizing coping in boys ($B = 1.19, p < .001$) but not girls ($B = 0.41, p = .159$). The three-way interaction did not significantly predict externalizing coping.

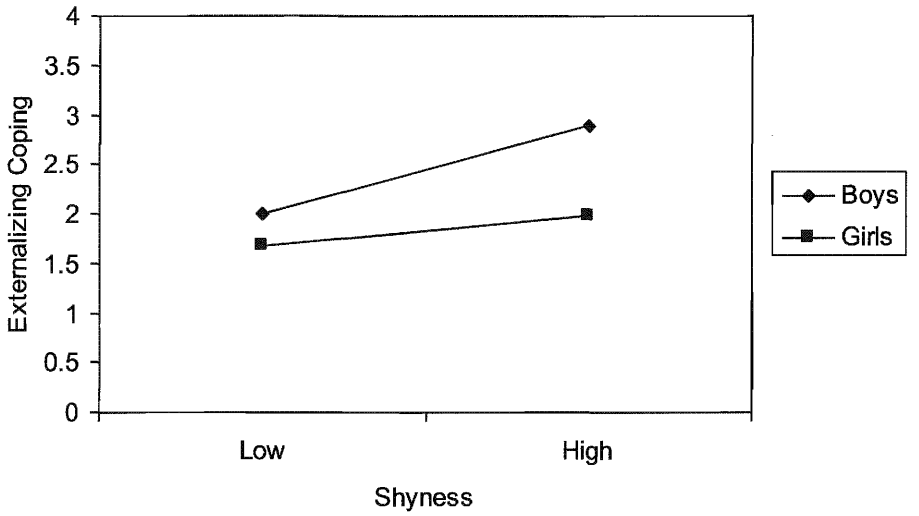

Figure 5. Interaction between shyness and gender in predicting externalizing coping.

Moderated mediation model. In order to discern if personality self-theories or gender moderated the relationship between shyness and attributions (i.e., path *a*), or attributions and coping (i.e., path *b*), a series of hierarchical regression models was run in two separate phases.

Shyness to attributions. The first phase of analyses tested the hypothesis that personality self-theories and gender would moderate the relationship between shyness and attributions. In this case, a single hierarchical regression model, in which attributions were designated as the DV, was run. As with the simple moderation model, gender and

personality self-theories were tested as prospective moderators in a single hierarchical model, rather than two separate models. Similarly, all of the predictors were centered to reduce potential repercussions of multicollinearity on the results. Specifically, attributions were regressed onto shyness, gender and personality self-theories on step 1, the two-way interactions between shyness and personality self-theories, shyness and gender, and personality self-theories and gender on step 2, as well as, the three-way interaction between shyness, personality self-theories and gender on step 3. Results of the analyses are presented in Table 8.

Results indicated that, overall, the model displayed in Table 8, accounted for 6.1% of the variability in attributions, $R^2 = .06$, $F(7, 185) = 1.73$, $p = .104$. Shyness emerged as the only unique predictor of attributions, such that greater levels of shyness were associated with more negative attribution biases. The absence of significant two- and three-way interactions in the model, however, suggests that gender and personality self-theories did not moderate the nature of this relationship.

Thus, the hypothesis that personality self-theories would moderate the negative relationship between shyness and attributions, such that the relation would be stronger for entity-oriented theorists and weaker for incrementally-oriented theorists was not supported.

Attributions to coping. The second phase of the analyses tested the hypotheses that gender and personality self-theories would moderate the relationship between attributions and each of the three coping strategies (i.e., social support, problem-solving, externalizing) for which a mediated effect was originally established (i.e., path *b*). Therefore, three separate hierarchical models were tested. For each model, coping was

Table 8. *Summary of Hierarchical Multiple Regression Analysis for Shyness, Personality Self-theories, and Gender Predicting Attributions*

	Attributions ($N = 193$)						
Predictors	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*
Step 1				.03	2.22	3, 189	.087
Shyness	-1.80*	0.69	.03				
Gender	-0.57	0.49	.01				
Personality theories[a]	-0.14	0.27	.00				
Step 2				.02	1.05	3, 186	.373
Shyness x Personality	-0.47	0.80	.01				
Shyness x Gender	0.72	1.39	.00				
Gender x Personality	0.65	0.55	.01				
Step 3				.01	2.24	1, 185	.136
Shyness x Gender x Personality	2.45	1.63	.01				

Note. Gender (1 = boys, 2 = girls)
*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$
[a]Higher scores = greater entity orientation

regressed on shyness, attributions, personality self-theories, and gender (step 1), followed by shyness x attributions, shyness x personality self-theories, shyness x gender, attributions x personality self-theories, attributions x gender, gender x personality self-theories (step 2), and shyness x attributions x personality self-theories, shyness x attributions x gender, attributions x personality self-theories x gender (step 3). Table 9 shows the results for each of the three coping strategies tested.

As shown in Table 9, none of the two- or three- way interactions, which would suggest moderation of path *b*, depicted in Figure 1, were significant, suggesting that the path from attributions to social support, problem-solving, and externalizing coping was not further moderated by personality self-theories or gender. It is of note, however, that the two-way interaction between gender and personality self-theories was significant for problem-solving, suggesting a smaller reliance on problem-solving coping for incrementally-oriented boys than girls (see Figure 6).

Although my original mediation analyses suggested that attributions did not partially mediate the effect of shyness on distancing and internalizing coping, Preacher et al. (2007) have noted that the presence of a significant indirect effect is not a necessary prerequisite for examining conditional indirect effects between any given variables. Based on these suggestions, it was deemed noteworthy to examine if an indirect effect for distancing and internalizing may be established at particular levels of personality self-theories or gender. Results of moderated mediation analyses, however, did not reveal any new significant two- or three-way interactions, confirming the absence of a partially mediated effect for these variables, even after accounting for personality self-theories and gender as prospective moderators.

Table 9. *Summary of Moderated Mediation Analyses Predicting Social Support, Problem-Solving, and Externalizing Coping*

	Social Support (N = 171)							Problem-Solving (N = 172)							Externalizing (N = 168)						
Predictors	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*	*B*	*SE*	sr^2	ΔR^2	ΔF	*df*	*p*
Step 1				.16	8.03	4, 166	.000				.14	6.96	4, 167	.000				.19	9.61	4, 163	.000
Shyness	-0.36	.17	.02					-0.34*	.14	.02					0.67***	.19	.06				
Attribution	0.07***	.02	.07					0.06***	.02	.07					-0.06**	.02	.04				
Personality theories[a]	-0.00	.07	.00					-0.04	.06	.00					0.04	.07	.00				
Gender	0.41***	.13	.05					0.30**	.11	.04					-0.57***	.14	.09				
Step 2				.05	1.72	6, 160	.120				.07	2.33	6, 161	.035				.04	1.52	6, 157	.176
Shyness x Attribution	-0.06	.05	.01					-0.03	.04	.00					0.01	.05	.00				
Shyness x Personality	0.29	.19	.01					0.20	.16	.01					0.04	.21	.00				
Shyness x Gender	-0.31	.37	.00					-0.45	.31	.01					-0.81	.40	.02				
Attribution x Personality	0.03	.02	.01					0.04	.02	.02					-0.03	.02	.00				
Attribution x Gender	-0.05	.04	.00					-0.03	.03	.01					-0.01	.04	.00				
Personality x Gender	-0.30*	.14	.02					-0.27*	.12	.03					0.26	.15	.02				
Step 3				.00	0.23	3, 157	.874				.00	0.24	3, 158	.869				.01	0.95	3, 154	.419
Shyness Attribution x Personality	-0.01	.06	.00					-0.01	.05	.00					0.05	.06	.00				
Shyness x Attribution x Gender	-0.08	.10	.00					0.05	.08	.00					-0.02	.11	.00				
Attribution x Gender x Personality	0.02	.05	.00					0.02	.04	.00					-0.08	.05	.01				

Note. Gender (1 = boys, 2 = girls)
*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$
[a]Higher scores = greater entity orientation

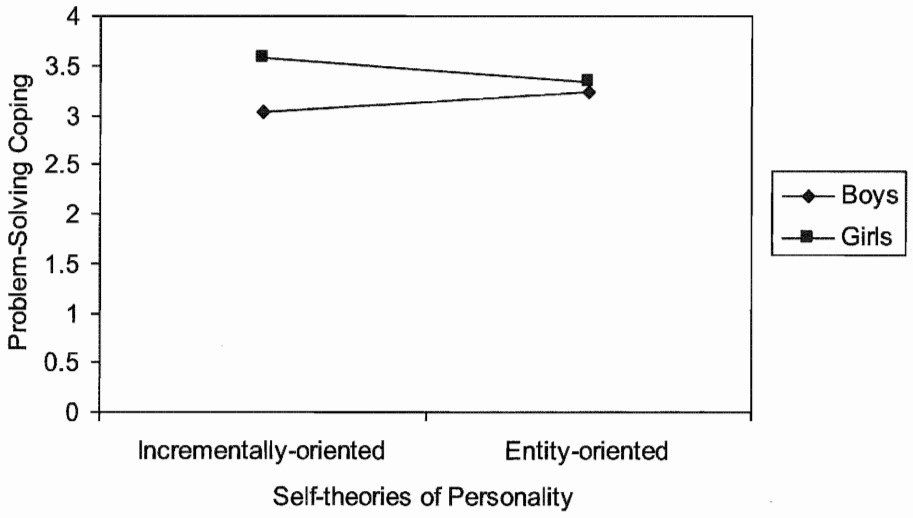

Figure 6. Interaction between personality theories and gender in predicting problem-solving coping.

Therefore, the postulation that implicit self-theories would moderate the positive relationship between attributions and approach-focused coping (social support seeking and problem-solving), such that the relationship would be stronger for incrementally-oriented theorists and weaker for entity-oriented theorists was not supported by the data. Further, the hypothesis that the positive relationship between attributions and avoidance-focused coping (internalizing and distancing) would be stronger for entity-oriented theorists and weaker for incrementally-oriented theorists was also not confirmed by these findings. Finally, contrary to the original expectations, which proposed that the indirect relations between shyness and coping would be moderated by personality self-theories as in the simple moderation model, a conditional indirect effect could not be established at either of the personality theory extremes.

Discussion

The goal of present research was to discern the underlying mechanisms that could explain how shy children cope with social conflicts, such as an argument with a friend. Specifically, the study sought to determine how shy children's interpretations of social situations and their beliefs in the malleability versus stability of their personality predict their coping.

The study addressed three major hypotheses, which were tested using mediation, moderation and moderated mediation frameworks, respectively. First, I tested the prediction that negative attribution biases would partially account for shy children's tendencies to endorse avoidant-oriented coping (e.g., internalizing, distancing) and evade approach-oriented coping (e.g., seeking social support, problem-solving) in interpersonal conflicts. Second, I examined the postulation that children who view their personality as malleable would use proactive forms of coping in negative social situations, whereas children who perceive their personality as fixed would be driven towards avoidant forms of social coping. Third, I tested the hypothesis that children with fixed personality beliefs would have more negative attribution patterns and greater inclinations toward avoidant forms of coping relative to children with malleable views. In addition, exploratory analyses were conducted to explore the associations between shyness and externalizing coping, as well as the role of gender on the relationships between shyness and coping in abovementioned models.

In order to address these postulations, 175 mid- to late- childhood children from elementary classrooms in Eastern Ontario, Canada, completed self-report measures assessing shyness, attributions, personality self-theories and coping.

Main Effects

In accordance with my expectations, shyer children were less likely to pursue approach-oriented coping (social support and problem-solving) and more likely to pursue avoidance-oriented coping (internalizing) in interpersonal conflicts than less shy children. These findings are consistent with Asendorpf's (1990) conceptual framework, which postulates that shy children's behaviour is an outcome of internally conflicting desires between their approach and avoidance motivational subsystems. Thus, even though shy children may be highly motivated to act assertively in social conflicts (i.e., *high* approach motive), their social fears may constrain their abilities to do so by leading them to avoid social confrontation altogether (i.e., *high* avoidance motive). Previous literature (e.g., Eisenberg et al., 1998; Prins & Ollendick, 2003; Rubin et al., 2009) has shown that socially withdrawn children commonly remove themselves from social situations as a means of providing themselves temporary relief from wariness that they feel upon exposure to social encounters. Given that an interpersonal conflict is likely to elicit more social anxiety in shy children than a "regular" encounter with their peers, it is not surprising that shy children did not, and plausibly could not, engage in assertive measures to resolve social conflicts.

Social support seeking. With respect to social support seeking, experience may have taught shy children that they do not possess the social skills required to seek necessary advice from adults or teachers or that, if they do, their attempts will be largely unsuccessful (Stewart & Rubin, 1995). Furthermore, they may be apprehensive of approaching others, especially their peers, because of a general lack of supportive peer

networks in their lives and/or due to a fear that their queries will be ridiculed or rejected (Nelson et al., 2005; Burgess et al., 2006).

Problem-solving coping. Research (e.g., Findley et al., 2009; Nelson et al., 2005) has also shown that repeated lack of success in social situations may ultimately lead shy/withdrawn children to have low perceived self-competence, especially in social situations in which conflict resolution skills are essential. As a result, shy children may view themselves as being less adept than non-shy children in formulating constructive problem-solving plans to cope with an interpersonal argument. These postulations are also consistent with previous work (e.g., Stewart & Rubin, 1995), which demonstrated that shy children make less use of problem-solving strategies in social dilemmas than non-shy children.

Internalizing coping. As expected, shyness was also related to greater use of avoidance-oriented internalizing, but not distancing, coping. In fact, shyness was the best sole predictor of internalizing coping, relative to the other four coping strategies. Consistent with previous findings (e.g., Eisenberg et al., 1998; Findley et al., 2009), these results suggest that stressful social situations may trigger an over-aroused physiological state in shy children that essentially incapacitate their abilities to act proactively. As a result, shy children's focus may become constrained on the self, rather than the problem, leading them to pursue internalizing strategies, such as "going off by myself" and "feeling sorry for myself" that can effectively relieve them of such overwhelming levels of anxiety (Burgess et al., 2006; Findlay et al., 2009; Sandstorm, 2004). Although these avoidant actions may be adaptive in the short-term, frequent and consistent reliance on

them may prevent shy children from learning how to effectively manage their anxieties in the long-term (Rubin et al., 2009).

Externalizing coping. Results of exploratory analyses further revealed that shyness was associated with greater use of externalizing coping. Although these findings are inconsistent with much of the previous work (e.g., Nelson et al., 2008; Rydell et al., 2009; Thorell et al., 2004), a greater understanding of this relationship may be conceivably obtained by differentiating between children who are shy-inhibited from those who are shy-withdrawn (Kerr, Tremblay, Pagani, & Vitaro, 1997).

Kerr et al. (1997) suggested that even though behavioural inhibition and social withdrawal share common behavioural features (e.g., social isolation), they confer different risks for delinquency. Specifically, these authors noted that while behavioural inhibition buffers young boys against delinquent actions, social withdrawal has no corresponding effect. These divergent outcomes may be attributed to the fact that social withdrawal is often reflective of a behavioural manifestation of children's social experiences, such as peer rejection, whereas behavioural inhibition commonly stems from a temperamental disposition (Kerr et al., 1997; Rubin & Asendorpf, 1993). Furthermore, it has been suggested that while social withdrawal can be an outcome of both social ineptitude and peer exclusion (e.g., Asendorpf, 1990; Rubin & Asendorpf, 1993), behavioural inhibition is not necessarily associated with poor social skills (e.g., Asendorpf, 1993) or social rejection (e.g., Kerr et al., 1997). Hutteman, Denissen, Asendorpf, and Van Aken (2009) have shown that the combination of poor social knowledge and social rejection commonly shared by shy-withdrawn individuals may be a precursor for development of aggressive tendencies over time. Some of these shy-

withdrawn individuals may be characterized as having *high* social approach (i.e., high desire to engage in social interactions) and *low* social avoidance motives (i.e., poor impulse control in social settings), which increase the likelihood that behaviour will violate socially-appropriate norms (Rubin & Asendorpf, 1993). For these individuals, anger and aggressive conduct may develop as retaliatory responses to cumulative experiences of interpersonal rejection (Leary, Twenge, & Quinlivan, 2006).

In fact, Rubin and Asendorpf (1993) posited that peer rejected shy-withdrawn children tend to be average or above average in aggression in comparison to shy-inhibited or non-shy children. Consistent with these notions, it may be speculated that children's shyness in this study was more representative of a behavioural expression of children's social experiences (i.e., shy-withdrawn) rather than temperament (i.e., shy-inhibited). As such, past social exclusion may have led the shy children in this sample to develop high levels of anger regarding social events. Similar to rejected shy-withdrawn children, they may have come to externalize their emotions onto neutral sources (e.g., friends, family) as a way of retaliating in order to regain a sense of social control.

Based on these presumptions, externalizing coping may then be viewed as an aspect of reactive or retaliatory aggression – overt displays of anger under conditions of stress (see Dodge, 1991). Similar to shy-withdrawn children, children who are reactively aggressive (i.e., engage in aggression to defend themselves or retaliate against a threat or provocation) (see Dodge 1991) are typically characterized by poor social skills (Poulin and Boivin, 2000; Price & Dodge, 1989), high temperamental negative emotionality (Vitro et al., 2006), and emotional dysregulation (Xu & Zhang, 2008). Thus, they often cannot use socially acceptable behaviour to cope with the high levels of arousal elicited

by negative social circumstances (e.g., peer arguments). As such, their impulsive and/or aggressive behaviour becomes highly driven by their "flight-or-fight" response, especially when escape and avoidance do not pose feasible coping alternatives (Xu, Farver, & Zhang 2009). Such "hot-headed" actions, however, are likely to elicit further negative reactions from their peers (Dodge et al., 1997; Vitaro, Brendgen, &Tremblay, 2002; Xu & Zhang, 2008), essentially leading many reactively aggressive children to engage in continuous bully-victim cycles.

Children involved in both bullying and victimization (i.e., bully-victims) also have a number of temperamental characteristics in common with shy children including negative emotionality (Marini, Dane, Bosacki, & YLC-CURA, 2006), high levels of anxiety (Toblin, Schwartz, Hopmeyer Gorman, & Abou-ezzeddine, 2005), difficulties with emotion regulation (Toblin et al., 2005), and poor peer relations (Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004; Toblin et al., 2005), all of which predispose them to aggressive reactions in negative peer encounters. The conjoint effects of negative social experiences and emotions lead them to perceive aggressive behaviour as a legitimate course of action in social confrontations, increasing their tendencies towards retaliation, rather than reconciliation, with their peers (Marini et al., 2006).

Taken together, these findings suggest that shy children in the current study may have shared many of the similar characteristics possessed by reactively aggressive and/or bully-victim children. In particular, it may be that consistent negative social experiences and low emotional self-regulation increase shy children's sensitivity and lower their frustration tolerance for negative social encounters. As a result, they may become more

inclined to instinctively react with anger outbursts to peer provocations, primarily as a means of preventing further bouts of rejection and/or victimization by others.

More recently, Kashdan and McKnight (2010) have also recognized that there is a subset of distinct individuals with social anxiety (approximately 20% of socially anxious individuals), who are characterized by impulsivity, disinhibition and novelty-seeking tendencies. These individuals tend to believe that risk-taking is a means to enhance their social status, but lack the necessary control over their negative emotions and hostile impulses to actually gain any social benefits from engaging in such assertive behaviours. In light of this evidence, it is plausible that the shy children in the current study possessed temperamental inclinations towards aggression that mirror this unique sample of socially anxious individuals. If so, externalizing coping may have been driven by their risk-taking tendencies and desires to appear socially superior relative to the other child involved in the interpersonal argument.

Mediation Analyses

Results of mediation analyses also provided supporting evidence for my hypotheses that shy children's perception of social conflicts as the outcome of an enduring trait (e.g., social incompetence) may partially explain why they do not seek social support from others and do not develop problem-solving strategies to resolve interpersonal stressors. Interestingly, exploratory analyses further showed that shy children's negative attribution biases also partially accounted for their tendencies to externalize as a means of coping with social conflict.

Given that shy children are high in negative emotionality, they may be more likely than non-shy children to focus selectively on threatening cues in the environment

(Eisenberg et al., 1998; Lengua & Long, 2002). These attentional biases may be particularly salient in social situations, which confer a high degree of danger for shy children (Vassilopoulos & Banerjee, 2008). Due to the threatening nature of social situations, it may be further postulated that shy children, like shy adults, exhibit a high degree of self-monitoring in such environments (Alm, 2007). Their increased sensitivity and awareness of environmental threats (e.g., another child's angry facial expression), as well as internal responses (e.g., fear and embarrassment), may redirect their attention onto personal shortages that contributed to negative social circumstances in the first place. As a result, their personal flaws (e.g., poor social skills) may become more prominent justifications of social disputes relative to situational factors (e.g., bad day) (Alm, 2007).

The belief that social problems are a consequence of internal, stable and global personal deficits may lead shy children to view social situations as uncontrollable. As a result, they may be more hesitant and less assertive in their efforts to change a given social outcome relative to non-shy children (Wichmann et al., 2004). For example, they may be more likely than non-shy children to pursue low-cost social strategies (i.e., discreet actions) as a means of seeking attention or help from others (see Stewart & Rubin, 1995), inadvertently increasing the likelihood that their measures will be ignored and/or rejected. Such social failure may eventually foster feelings of learned helplessness in shy children, diminishing their inclinations to attempt to change future social circumstances, irrespective of their level of distress (Wichmann et al., 2004).

These self-defeating attributions may also exacerbate their existing social fears, essentially overwhelming their self-regulatory capacities. Given that shy children often have difficulties regulating their emotions in social situations (e.g., Eisenberg et al.,

1998), their immediate social goals may become more centered on alleviating their agitated state rather than developing effective coping responses to resolve the situation at hand (Burgess et al., 2006; Lengua & Long, 2002). As such, their perceived self-efficacy for resolving interpersonal situations may diminish (Burgess et al., 2006; Vassilopoulos & Banerjee, 2008; Wichmann et al., 2004), so that they come to deem themselves as lacking the necessary skills to approach others for advice successfully or to develop effective step-by-step solutions on their own.

In addition to exacerbating existing social fears, negative attribution biases also commonly elicit feelings of anger in shy/withdrawn children (Burgess et al., 2006) and socially anxious individuals (Kashdan & McKnight, 2010). Anger may be largely a by-product of shy children's reasoning that their goals for social acceptance have been thwarted by their own behaviour and personal, fixed deficiencies. If children in this study emulated the rejected shy-withdrawn, reactively aggressive, bully-victims or the unique socially anxious individuals discussed above, then it may be postulated that their frustration tolerance for social rejection would be lower than expected for shy-inhibited children. As such, the presence of anger in these children may translate into a desire to retaliate against the perpetrator of the social argument or to act aggressively towards others (Kashdan & McKnight, 2010). Engaging in externalizing actions such as, "take it out on others, because I feel sad or angry," may pose a way for shy children to regain a sense of social control by minimizing their risk for victimization by others (i.e., they attack others before the others get a chance to attack them). Outward displays of anger, such as "yell to let off steam" and "curse out loud," can be also expressions of

dominance, which can help repair their social status and prevent future bouts of rejection by observing peers (Kashdan & McKnight, 2010).

Of note is that the effect of shyness on social support seeking, problem-solving and externalizing coping was not fully eliminated in the presence of attributions as a potential mediator. This finding suggests that additional factors play a role in shy children's tendencies to evade approach-focused and endorse aggressive coping. Similarly, the absence of a partially mediated effect for the relation between shyness and internalizing coping implicates the presence of other explanatory mechanisms for this commonly observed relationship. One such variable may be shy children's self-regulatory skills. Research (e.g., Eisenberg et al., 1997; Lazarus & Folkman, 1984; Skinner & Zimmer-Gembeck, 2007) has shown that effective coping behaviour is highly driven by an individual's ability to coordinate his or her emotional reactions and cognitive appraisals during stressful situations. The ability to establish a balance between emotional and cognitive processes under conditions of extreme stress is thought to provide an individual with the necessary cognitive resources to focus on alleviating the problem as opposed to their affective states (Eisenberg et al., 1997; Skinner & Zimmer-Gembeck, 2007). In order to gain a more comprehensive understanding of mechanisms that underlie shy children's coping behavior, future studies may benefit from examining shy children's self-regulatory abilities in negative social situations.

Moderation Analyses

Approach-oriented coping. Results of moderation analyses provided partial support for my predictions by revealing that the negative repercussions of shyness on approach-focused coping (i.e., social support seeking, problem-solving) are applicable to

entity-oriented girls only. Surprisingly, for boys, shyness appeared to be of greater detriment to their use of approach-focused coping if they were incrementally-, rather than entity-oriented, theorists.

The decreased tendency of shyer entity-oriented girls to engage in approach-focused coping during interpersonal conflicts is not surprising given entity-theorists' tendencies to adopt *performance* goals in social situations, which focus on demonstrating social competence (Beer, 2002; Dweck, 1999; Erdley et al., 1997; Molden & Dweck, 2006; Rudolph, 2010). Shyer entity-oriented girls may be more likely than less shy entity-oriented girls to attribute social conflicts to personal flaws (e.g., social incompetence) that stem from their shyness. In light of the view that their undesirable social attributes are static entities, shyer entity-oriented girls may come to view poor interpersonal relationships a part of their destiny that is essentially impermeable to change (Rudolph, 2010). Consequently, they may consider seeking advice from others and attempts to develop resolution strategies futile, primarily because they may not consider themselves adept enough to execute such actions in the first place. Additionally, they may feel that such efforts would be a further indication of their social incompetence to others, especially if their queries for advice or problem-solving strategies proved to be peculiar or ineffective (Beer, 2002; Robins & Pals, 2002). In order to preserve their self-worth, or "save face," shy entity-oriented girls may choose to avoid such personal risks by adopting helpless responses (i.e., giving up) (Erdley et al., 1997; Molden & Dweck, 2006; Rudolph, 2010).

Surprisingly, the results of the present study suggested that shy incrementally-oriented boys adopt an avoidant stance in interpersonal conflicts that is closely analogous

to that seen in shy entity-oriented girls. Although these results are largely inconsistent with incremental self-theorists' tendencies to adopt *learning* goals in social situations (Beer, 2002; Dweck, 1999; Erdley et al., 1997; Molden & Dweck, 2006; Rudolph, 2010), it is plausible that shy boys' range of coping opportunities in social situations is vastly limited by societal expectations and their peer experiences. Given that shyness in boys is commonly perceived as a violation of gender-based cultural norms, shy/withdrawn boys tend to be at a greater risk for peer victimization relative to shy girls (Coplan et al., 2004; Rubin et al., 2009). As a result, reliance on approach-oriented coping may be less socially adaptive for shy boys because such actions can exacerbate their risk for subsequent peer rejection (Kochenderfer-Ladd & Skinner, 2002; Polasky, Kochenderfer-Ladd & Visconti, 2010). In fact, boys' efforts to discuss their victimization and seek social support from others may be met with reproach because they are expected to possess the necessary resources to resolve social disputes on their own. Similarly, victimized boys' problem-solving strategies are often compromised by their poor social skills, leading them to implement ineffective or inappropriate measures that others may interpret as provocation rather than appeasement efforts (Kochenderfer-Ladd & Skinner, 2002). Given that children can easily detect social violations during their interactions (Nelson et al., 2005; Rubin et al., 2009; Stewart & Rubin, 1995), shyer incrementally-oriented boys' learning goals may be overcome by an incapacitating fear that their social assertiveness will only serve to further diminish their peer status by eliciting additional bouts of rejection.

Avoidance-oriented coping. Consistent with my predictions, there was also a trend for shyer entity-oriented theorists to endorse internalizing coping to a greater degree than shyer incrementally-oriented theorists. Given that shy entity theorists are likely to

interpret peer conflicts as stemming from stable personal flaws (e.g., poor social competence), negative social experiences may only serve to reinforce their existing attitudes regarding interpersonal situations (Beer, 2002; Rudolph, 2010). Due to the belief that social situations are impervious to their actions, shy entity-oriented theorists may view themselves as powerless agents in changing the natural course of their peer relationships (Rudolph, 2010). In fact, research (e.g., Sandstorm, 2004) has shown that children who solely focus on their social failures, while disregarding active attempts to remedy social circumstances, can become overwhelmed by feelings of inadequacy and hopelessness. Such feelings can lead to high levels of internalizing symptoms, such as self-blame, worry and sadness in social situations, as evidenced by shy entity-oriented theorists in the current study (Sandstorm, 2004).

Shyer incrementally-oriented theorists, in contrast, may try to determine the underlying causes for peer conflicts and use such information in an effort to improve their social skills, and thereby the quality of their relationship with the other child (Beer, 2002; Rudolph, 2010). Since they are more likely than entity theorists to believe that their efforts will result in improvement of their abilities and social outcomes (Beer, 2002; Rudolph, 2010), shy incremental theorists may preserve a sense of hopefulness about themselves and their social relationships. As a result, they may be less apt than shyer entity-oriented theorists to self-blame or endorse emotionally arousing actions such as "cry about it" and "worry about it" in negative interpersonal situations.

Gender Differences

Exploratory analyses also revealed several noteworthy gender differences in coping. Specifically, girls were more likely to use support seeking and problem solving,

whereas boys were more apt to use distancing and externalizing coping. In line with previous literature (e.g., Causey & Dubow, 1992; Eschenbeck et al., 2007) these findings emphasize the importance of considering gender-specific socialization experiences and societal expectations when studying children's coping in interpersonal situations.

For instance, girls tend to be socialized to place value on connectedness goals, such as intimacy and positive relationships (Burgess et al., 2006; Chung & Asher, 1996; Kochenderfer-Ladd & Skinner, 2002). Thus, when confronted with negative interpersonal encounters, girls' social goals are often centered on developing effective conflict resolution strategies to preserve and nurture their relationship with other children (Newman, Murray & Lussier, 2001; Sandstorm, 2004). As such, discussing their feelings and experiences with others (Kochenderfer-Ladd & Skinner, 2002), seeking help from teachers (Newman et al., 2001), parents and friends (Polasky et al., 2010), and generating prosocial strategies (Tamres et al., 2002; Polasky et al., 2010) are all socially acceptable and adaptive ways of fulfilling their personal goals and values.

Boys, on the other hand, are socialized to display power, autonomy and pursue dominance goals in social situations (Burgess et al., 2006; Chung & Asher, 1996; Sandstorm, 2004). As a result, they are more apt than girls to downplay the significance and emotional impact of their peer conflicts by acting nonchalantly and attempting to "forget the whole thing," as exemplified by distancing coping (Kochenderfer-Ladd & Skinner, 2002; Polasky et al., 2010). Furthermore, they are more likely than girls to attribute hostile intentions to the peer provocateur (see Sandstorm, 2004), which leads them to consider, and thereby utilize, coercive and hostile strategies as more socially

appropriate ways of coping with social conflicts (Kochenderfer-Ladd & Skinner, 2002; Newman et al., 2001; Polasky et al., 2010)

At this point, it should be noted that there was a trend for shyer boys to rely on externalizing coping to a greater degree than shyer girls. These results are highly consistent with abovementioned gender differences for socialization patterns and societal expectations. Given greater cultural acceptance for boys to be confrontational in their social encounters, it is not surprising that shy boys would strive to engage in externalizing actions to a greater degree than shy girls. Since shyness in boys is commonly associated with low peer status (Coplan et al., 2004; Rubin et al., 2009), externalizing coping may be a means for them to display power and redeem their social standing by earning acceptance and respect from other children (see Kashdan & McKnight, 2010). In fact, Sandstorm (2004) has shown that poor social status is associated with greater use of aggressive coping, plausibly due to a desire of poorly accepted children to "fight back" or "get even" with the peers who reject them. Kashdan and McKnight (2010) extended these ideas further by positing that aggressive conduct can be an expression of dominance that serves to minimize children's risk for future victimization.

Moderated Mediation Analyses

The nature of children's attributions, and in turn, their coping did not further vary as a function of personality self-theories or gender. However, a notable finding from the moderated mediation analyses was that incrementally-oriented girls were more likely to report problem-solving coping than incrementally-oriented boys. These findings suggest that even though incrementally-oriented boys and girls may have the same underlying

social beliefs (i.e., social outcomes can be improved through effort) and goals (i.e., *learning* goals) (see Beer, 2002; Erdley et al., 1997; Rudolph, 2010), gender-based societal norms may limit the degree to which problem-solving is an appropriate response to interpersonal conflicts. Given that girls tend to place more value on cultivating positive relationships with their peers than boys (e.g., Burgess et al., 2006; Chung & Asher, 1996; Kochenderfer-Ladd & Skinner, 2002), social setbacks may lead incrementally-oriented girls to expend greater resources on developing effective strategies that can restore their friendship with the other child. Incrementally-oriented boys, on the other hand, may be more reluctant to spend time devising compensatory actions (e.g., "do something to make up for it") or ruminating about potential solutions (e.g., "go over in my mind what to do or say") in order to minimize the apparent relevance of the interpersonal situation to others, thereby preserving their masculinity and peer status (Kochenderfer-Ladd & Skinner, 2002).

Supplemental Findings

A finding of interest that emerged from zero-order correlation analyses also revealed that shyness was positively associated with entity-oriented views of personality. Although the effect size was small, the results nevertheless suggest that a subset of shy children were inclined to believe that they have a stable disposition that is resistant to change. Such attitudes could be quite detrimental to shy children because they may come to perceive their undesirable social attributes as an inherent part of who they are and their negative peer relationships as an unfortunate part of their destiny (Rudolph, 2010). Consequently, they may view social interactions as situations that challenge their social competence and threaten their peer status (Beer, 2002). These socio-evaluative concerns

may lead them to refrain from social situations as much as possible, limiting their use of social interactions to improve their social competence and overcome their social anxieties (Beer, 2002; Rudolph, 2010). As a result, they may become more inclined to behave in ways that consistently elicit negative reactions or rejection from their peers, essentially reinforcing their beliefs and helplessness in future social situations (Rudolph, 2010). Over time, such social experiences may inadvertently increase the likelihood of exacerbating and sustaining their shyness across development.

Strengths

The present study has several notable strengths that warrant attention. First, this study provides novel insight into theoretical frameworks that can conceptualize the nature of relationships between children's shyness, attributions, personality self-theories, and coping strategies. Specifically, it is the first study to establish attribution biases as a partial mediator of the relationship between children's shyness and select coping strategies (i.e., social support seeking, problem-solving and externalizing). It is also unique in that it is the first study to highlight gender differences in shy children's use of coping strategies in the context of personality self-theories. Such findings offer important new insights regarding differences in the adaptive value of approach-oriented coping in social situations for shy incrementally-oriented boys and girls. Moreover, the present study extends previous literature on shyness and externalizing tendencies by accentuating the importance of considering heterogeneity among shy children when conducting research investigations on shyness.

Second, children's use of coping strategies was examined on the basis of lower-order categories rather than at the more general level of approach-avoidance. Consistent

with arguments posed by Skinner et al. (2003), such an analytic approach provides a more comprehensive understanding of children's unique thoughts, emotions, and actions in social situations, which tend to be masked by higher-order conceptualizations. Furthermore, examination of distinct coping behaviours takes into consideration the appropriateness of each strategy, not only in the context of the social stressor, but also, gender.

Third, in accordance with recent recommendations in literature (e.g., MacKinnon et al., 2002; McCartney et al., 2006; Preacher & Hayes, 2008; Preacher et al., 2007; Wu & Zumbo, 2008), the bootrstapping technique was used to estimate the significance of the mediated effect. Given that the current sample size was smaller than recommended for the appropriate use of the Sobel test (i.e., $N < 400$), it was important to assess the value and significance of the indirect effect with a nonparametric statistical tool, such as bootstrapping, that does not rely on underlying assumptions of normality.

Lastly, the participants in this study were comprised of a representative sample of preadolescent children. Since preadolescence precedes major developmental shifts, marked by increased importance of peer relationships and peer status, as well as neurobiological and hormonal changes, information from studies with children at this stage can provide important implications for early interventions.

Limitations and Future Directions

There are also several limitations to the present study. Most importantly, it is based on cross-sectional data, which precludes justified conclusions about the directionality of effects in the mediated model. Although evidence did not support reverse mediation (i.e., attributions did not partially mediate the effect of coping on

shyness), the possible existence of alternate models that can theoretically conceptualize relationships between shyness, attributions, and coping cannot be excluded. For example, it is plausible that children's coping strategies could partially mediate the relationship between shyness and attribution biases. In other words, shy children's tendencies to resort to maladaptive coping (e.g., internalizing) may partially account for their self-defeating attributions (e.g., avoiding a social problem may exacerbate feelings of social incompetence). Given that this study is the first to demonstrate a partially mediated effect of attributions on the relations between shyness and social support seeking, problem-solving, and externalizing coping, however, future investigators should attempt to replicate these findings using longitudinal designs. Such studies would allow for examination of directional effects, as well as age-related changes in shyness, attributions, personality self-theories, and coping.

A few important methodological concerns regarding several of the measures should be noted as well. The measures assessing children's attributional style and personality self-theories both had low internal reliability, which may have underestimated some of the effects in the mediation and moderation frameworks, respectively. Moreover, the small number of items on the personality self-theories questionnaire may have, to some extent, limited the degree to which children's personality self-beliefs could be adequately captured. With respect to the coping measure, it is also important to note that the hypothetical scenario, which asks children to imagine that they "got into a *fight* or *argument* with a friend" (see Causey & Dubow, 1992), does not differentiate between verbal and physical peer conflicts. As such, children's interpretations of the scenario may have been variable, leading them to endorse coping responses that they felt were most

suited to their personal understanding of the situation. For example, children who perceived the conflict as primarily physical in nature may have chosen externalizing coping because they felt that aggression was the most appropriate response to a physical provocation. Thus, future researchers interested in examining children's coping behaviour may find it advantageous to address some of these considerations through minor scale revisions, or verbal clarifications.

The number and variety of different coping strategies that children may have used to resolve the interpersonal argument also was not assessed by the present work. Although children may show a preference towards approach or avoidance strategies in socially distressing situations, it is plausible that they may use multiple strategies simultaneously. Thus, future investigations may need to evaluate this premise by examining the range of coping initiatives that children may pursue in interpersonal conflicts.

The degree of generalizability of children's thoughts and behaviours to real-world social situations may be limited by hypothetical scenarios in self-report measures. Since hypothetical social situations are likely to be less ambiguous and threatening than real life events, they may be less emotionally arousing for children, especially for those who are shy. As a result, children's inferred attributions and coping behaviours may digress from those they would display in reality (Rubin, Daniels-Bierness & Bream, 1984). In order to corroborate the findings from children's self-report measures, future studies may benefit from inclusion of other forms of assessment, such as direct observations in school settings or reports from other informants (e.g., parents).

It is also of note that shy children's preference for externalizing coping could not be explained by concepts such as personality, behavioural inhibition, and social withdrawal, given the measures included in the current study. As a result, it is difficult to determine whether the statistical relationship between shyness and externalizing coping stemmed from biological (e.g., measures of cortisol or electroencephalogram asymmetry) or social factors (e.g., peer-rating nomination reports, such as the Revised Class Play by Masten, Morrison, & Pellegrini,1985) or, alternatively, whether the children in the sample comprised a unique sample of shy-disinhibited children. Since socially withdrawn, behaviourally inhibited, and disinhibited children can have different social experiences and goals (e.g., Kerr et al., 1997; Rubin & Asendorpf, 1993), it may be especially important to evaluate these constructs separately when examining the relations between shyness and externalizing tendencies, or aggression.

Finally, examining other potential mediators of the relations between shyness and social support seeking, problem-solving, and externalizing coping would be of interest. Additionally, studies should aim to investigate precursors to internalizing coping. As abovementioned, one noteworthy variable to examine for all of these coping strategies may be children's self-regulatory abilities. One way of examining children's emotional reactivity and regulation would be to include physiological measures of shy children's reactions, such as electrocardiogram recordings of their heart rate, during a simulated social conflict with another peer (see Gazelle & Druhen, 2009). Shyness emerged as the strongest predictor of internalizing coping in the current study and previous research has shown internalizing coping to account partially for shy children's socio-emotional maladjustment (see Findlay et al., 2009). Thus, deducting an understanding of

explanatory mechanisms for the shyness-internalizing relation can provide pertinent information for prevention and intervention strategies for shy children. For instance, establishing whether self-regulation deficits precede shy children's tendencies to pursue internalizing coping would indicate that intervention strategies may need to implement relaxation training in their programs.

Implications

The present study provides an important understanding of some of the cognitive precursors to shy and non-shy children's coping in social situations. Specifically, children's attribution patterns and personality self-theories shed light onto how their self-appraisals shape their goals and behavioural reactions in a socially distressing context.

Evidence from the current study suggests that prevention and intervention programs may need to focus on restructuring shy children's social cognitive processes in order to increase their reliance on social support seeking and problem-solving, and decrease their inclinations towards aggressive coping. Specifically, it may be advantageous to teach shy children to relocate their attentional resources from personal shortcomings to external sources of information (e.g., social circumstances) in social situations, so that can they can gain a more comprehensive understanding of factors influencing their social interactions (see Alm, 2007).

Additionally, shy children may benefit from reconceptualizing their views of personality. In particular, prevention and intervention programs may need to teach shy children to perceive their skills, especially social competence, as malleable entities that are susceptible to change. By adopting an incrementally-oriented stance, shy children should come to view themselves as in control of their destiny and their social

relationships. In doing so, they may become less inclined to self-blame and act helpless when confronted with interpersonal barriers. In addition, Solution-oriented therapy (e.g., Selekman, 1993), which focuses on emphasizing children's strengths, could be advantageous for allowing children to view themselves in a more positive light, and in a broader perspective, so that they can learn to become more open to approach-oriented coping initiatives.

Lastly, coping-oriented prevention and intervention programs may need to use gender-specific educational programming for shy children's personality biases. Although incrementally-oriented views may enhance shy girls' reliance on social support and problem-solving strategies, encouraging shy boys to do the same may be counterproductive. Based on male-specific cultural norms (e.g., Burgess et al., 2006; Chung & Asher, 1996; Sandstorm, 2004), shy boys may find it more adaptive to use coping alternatives, such as positive reappraisal or distancing that can help preserve their masculinity and peer status. Additionally, they may profit from social skill training or extracurricular activities (e.g., sports) that can improve their social competence and self-esteem in interpersonal situations. Given the novelty of these findings, however, in future studies, researchers may wish to examine further the role of personality self-theories in the context of shyness, as well as gender to validate these latter recommendations.

Conclusion

The present study contributes to existing literature on shyness and coping by identifying conceptual mechanisms and frameworks that may attenuate or exacerbate shy children's reliance on maladaptive forms of coping. Specifically, the current study identifies shy children's tendencies to attribute social conflicts to personal shortages (e.g.,

poor social skills) as partially accounting for their reluctance to seek social support and develop problem-solving initiatives, as well as their propensities to externalize as a means of social coping. The way shy children cope with social conflicts also appears to differ as a function of their personality self-views and gender. Specifically, shy children who believe that their social deficits are fixed (i.e., entity-oriented theorists) appear to exacerbate their reliance on internalizing actions, such as self-blame and crying, to a greater degree than shy children who view their shortages as malleable (i.e., incrementally-oriented theorists). Moreover, shyer incrementally-oriented boys' coping patterns appear synonymous with shyer entity-oriented girls' coping initiatives, which are characterized by a general reluctance to pursue approach strategies.

Collectively, these findings suggest that prevention and intervention programs may need to consider modifying children's social cognitive processes and possibly personality self-theory biases, in addition to explicit teaching of adaptive coping strategies. Clinicians and educators, however, may need to take special note of children's gender when designing and implementing educational programs that incorporate personality self-views. In contrast to girls, it is likely that shy boys should not be encouraged to adopt an incrementally-oriented stance as a means of promoting reliance on approach strategies because such measures may violate social conventions for male behaviour, and can thereby exacerbate, rather than alleviate, their risk for victimization.

Future research should attempt to build on these findings by further examining the role of personality self-theories on shy children's social behaviour, in the context of children's gender. Moreover, examining longitudinal associations between children's shyness, attributions, and coping would provide greater insight into temporal relations

between these variables. It also may be beneficial to investigate additional mediators in this conceptual pathway, such as emotional self-regulation. Such investigations may shed more clarity on existing underlying mechanisms that can provide additional implications for treatment and prevention of children's shyness.

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Appendix A

CSQ Measure

How I Feel Around Others

The next questions ask you about how you feel around other people.
Please circle the answer that **best** describes YOU!

1) I find it hard to talk to someone I don't know.	YES	SOMETIMES	NO
2) I am easily embarrassed	YES	SOMETIMES	NO
3) I am usually quiet when I am with others.	YES	SOMETIMES	NO
4) Do you blush when people sing "Happy Birthday" to you?	YES	SOMETIMES	NO
5) I feel nervous when I am with important people.	YES	SOMETIMES	NO
6) I feel shy when I have to read aloud in front of the class.	YES	SOMETIMES	NO
7) I feel nervous about joining a new class.	YES	SOMETIMES	NO
8) I go red when someone teases me.	YES	SOMETIMES	NO
9) Do you say a lot when you meet someone for the first time?	YES	SOMETIMES	NO
10) I am usually shy in a group of people.	YES	SOMETIMES	NO
11) I feel shy when I am the center of attention.	YES	SOMETIMES	NO
12) Do you blush a lot?	YES	SOMETIMES	NO
13) I feel shy when the teacher speaks to me.	YES	SOMETIMES	NO
14) If the teacher asked for someone to act in a play would you put your hand up?	YES	SOMETIMES	NO
15) It is easy for me to make friends.	YES	SOMETIMES	NO
16) I would be embarrassed if the teacher put me in the front row on stage.	YES	SOMETIMES	NO
17) When grown-ups ask you about yourself do you often not know what to say?	YES	SOMETIMES	NO
18) I go red when the teacher praises my work.	YES	SOMETIMES	NO
19) I feel shy why I have to go into a room full of people.	YES	SOMETIMES	NO
20) Are you embarrassed when your friends look at photos of you when you were little?	YES	SOMETIMES	NO
21) Would you be too shy to ask someone to sponsor you for a good cause?	YES	SOMETIMES	NO
22) I enjoy having my photograph taken.	YES	SOMETIMES	NO
23) I usually talk to only one or two close friends.	YES	SOMETIMES	NO
24) I am usually shy when I meet girls (boys).	YES	SOMETIMES	NO
25) I go red when I have to speak to a girl (boy) of my age.	YES	SOMETIMES	NO

Appendix B

CASQ-R Measure

How I Feel in Certain Situations

The next questions ask you about how you would feel in certain situations.
Pretend these situations below are happening to you.
Circle 'a' or 'b' for the answer that **best** describes you!

1. You get an "A" on a test a. I am smart b. I am good in the subject that the test was in	2. Some kids that you know say that they do not like you a. Once in a while people are mean to me. b. Once in a while I am mean to other people.
3. A good friend tells you that he or she hates you. a. My friend was in a bad mood that day. b. I wasn't nice to my friend that day.	4. A person steals money from you. a. That person is not honest. b. Many people are not honest.
5. Your parents tell you something that you make is very good. a. I am good at making some things. b. My parents like some things I make.	6. You break a glass. a. I am not careful enough. b. Sometimes I am not careful enough.
7. You do a project with a group of kids and it turns out badly. a. I don't work well with people in that particular group. b. I never work well with groups.	8. You make a new friend. a. I am a nice person. b. The people that I meet are nice.
9. You have been getting along well with your family. a. I am usually easy to get along with when I am with my family. b. Once in awhile I am easy to get along with when I am with my family.	10. You get a bad grade in school. a. I am not a good student b. Teachers give hard tests.

11.	You walk into a door and you get a bloody nose. a. I wasn't looking where I was going. b. I have been careless lately.	12.	You have a messy room. a. I did not clean my room that day. b. I usually do not clean my room.
13.	Your mother makes you your favorite dinner. a. There are a few things that my mother will do to please me. b. My mother usually likes to please me.	14.	A team that you are on loses a game. a. The team members don't help each other when they play together. b. That day the team members didn't help each other.
15.	You do not get your chores done at home. a. I was lazy that day. b. Many days I am lazy.	16.	You go to an amusement park and you have a good time. a. I usually enjoy myself at amusement parks b. I usually enjoy myself in many activities.
17.	You go to a friend's party and you have fun. a. Your friend usually gives good parties. b. Your friend gave a good party that day.	18.	You have a substitute teacher and she likes you. a. I was well behaved during class that day b. I am almost always well behaved during class.
19.	You make your friends happy. a. I am usually a fun person to be with. b. Sometimes I am a fun person to be with.	20.	You put a hard puzzle together. a. I am good at putting puzzles together b. I am good at many things.
21.	You try out for a sports team and do not make it. a. I am not good at sports. b. The other kids who tried out were very good at sports.	22.	You fail a test. a. All tests are hard. b. Only some tests are hard.
23.	You hit a home run in a ball game. a. I swung the bat just right. b. The pitcher threw an easy pitch.	24.	You do the best in your class on a paper. a. The other kids in my class did not work hard on their papers. b. I worked hard on the paper.

Appendix C

IPTQ-R Measure

THE WAY PEOPLE ARE

The next questions ask you about the way people are. Circle the answer that **best** describes what you think!

1) People can't really change what kind of personality they have. Some people have a good personality, and some don't and they can't change much.	1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree
2) Someone's personality is a part of them that they can't change very much.	1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree
3) A person can do things to get people to like them, but they can't change their real personality.	1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree
4) No matter who somebody is and how they act, they can always change their ways.	1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree
5) Anybody can change their personality a lot.	1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree
6) People can always change their personality.	1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree

Appendix D

SRCS Measure

How I Cope

Pretend you have gotten into a fight or argument with a friend. Circle the answer that **best** describes how often you would do each the following:

1. Tell a friend or family member what happened.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
2. Try to think of different ways to solve it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
3. Become so upset that I can't talk to anyone.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
4. Take it out on others because I feel sad or angry.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
5. Talk to somebody about how it made me feel.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
6. Change something so things will work out.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
7. Curse out loud.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
8. Do something to take my mind off of it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
9. Get help from a friend.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always

10. Decide on one way to deal with the problem and I do it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
11. Forget the whole thing.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
12. Worry too much about it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
13. Ask a friend for advice.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
14. Do something to make up for it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
15. Tell myself it doesn't matter.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
16. Cry about it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
17. Ask a family member for advice.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
18. Know there are things I can do to make it better.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
19. Just feel sorry for myself.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
20. Refuse to think about it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always

21. Yell to let off steam.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
22. Ask someone who has had this problem what he or she would do.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
23. Go over in my mind what to do or say.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
24. Go off by myself.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
25. Make believe nothing happened.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
26. Worry that others will think badly of me.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
27. Try to understand why this happened to me.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
28. Say I don't care.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
29. Ignore it when people say something about it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
30. Get mad and throw or hit something.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
31. Get help from a family member.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always

32. Get mad at myself for doing something that I shouldn't have done.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
33. Try extra hard to keep this from happening again.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always
34. Talk to the teacher about it.	1 Never	2 Hardly Ever	3 Sometimes	4 Most of the time	5 Always